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ABSTRACT

This learning unit on control via budgets is one in the Choice Series, a self-learning development program for supervisors. The purpose of the approximately eight-hour-long unit is to enable the supervisor to describe what a budget is, provide the information required to prepare budgets, understand how budgets are used, and use budgetary control techniques. An introduction provides an overview of the unit and lists unit objectives. Parts A through D contain informative material, activities and answer keys, self-checks and answer keys, and a summary. Topics include the definition of a budget, preparation of budgets, using budgets, and standard costing. Part E contains performance checks--an end check to be completed alone, a tutor check, and a work-based project. Part F consists of a brief unit review, extensions (print sources of additional information, such as units or sections in books), and a list of references. (YLB)

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An Open Tech Project

SUPERVISING
ECONOMIC AND FINANCIAL ASPECTS

71: Control via Budgets

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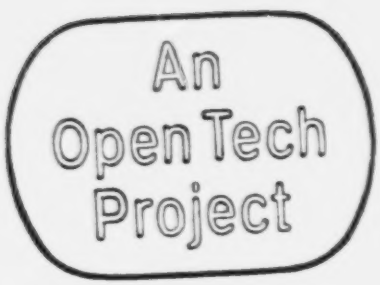
71: CONTROL VIA BUDGETS

Alastair Clelland



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Alastair Clelland
Control Via Budgets (Number 71 in the CHOICE SERIES of learning units)

Series Editor: Harry V Pardue
Northern Regional Management Centre.

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WORKING GUIDE TO THIS UNIT IN YOUR DEVELOPMENT PROGRAMME

This Unit is now your personal property - it's not for handing back to your training officer or to a tutor. It is your working book.

The Contents will increase in value to you each time you write on one of its pages. This is a working text for your personal notes - without notes its value is limited.

Qualifications forget about certificates and diplomas - you don't need them for this programme. What you do need is the wish:-

* to do your job better
* for personal development

Your study time is really up to you - we guess you will need about 8 hours in total. But it's your time - spend as long as you like.

How am I doing? you can judge for yourself by checking out how well you cope with the tasks we call Activities and Self Checks which occur throughout the unit. You can also get the Tutor Check and/or the Work Based Project to your tutor for an unbiased view of your progress.

Work Pace it's really up to you and depends on your interest. However, if you do well on the Activities and Self Checks, you could afford to speed up a little. Of course, if you don't do as well as you expect then you could slow down a little or flick back into the unit for a quick review of the more difficult ideas.

When in doubt - ask or seek help from:

* your family and friends
* colleagues at work
* your company training staff
* other open learners
* your tutor, by phone, by a visit to your support centre or by dropping your tutor a line through the post.

Don't worry if what you learn doesn't seem to be of use to you now, remember that times change - it may be useful one day. Anyway, just knowing more improves personal confidence.

So now make a start:-

71: CONTROL VIA BUDGETS by Alastair Clelland

ABOUT THIS UNIT

In life and in work we all have plans. There are things we want to do today, tomorrow, next week, next year. If we want to do these things, and they probably cost money, then we must plan accordingly. In accountancy language these plans are called budgets. The main difference between our own personal plans or budgets and those of an organisation such as the one you work in is in their complexity; and in their size!

By setting out budgets which allocate money to specific purposes, an organisation can install a control over its activities. A careful watch on money spent on an activity will help to ensure that overspending doesn't happen and, where underspending occurs, the money may be diverted to other uses. This kind of financial control is essential if we are to ensure that the organisation makes the profit it plans.

Supervisors, like any other manager, have a clear responsibility to meet these budgetary targets. Sometimes these targets are expressed in labour hours and materials, but in the end budgets are concerned with planning and control in terms of money so that planned profits are realised.

IN THIS UNIT WE WILL:

* explain what a budget is
* examine how budgets are prepared
* see how budgets are used

AUDIO TAPE
Side 1

Before you continue through the unit, you should listen to side 1 of the audio tape that accompanies the unit. You will find it useful if you refer to the unit objectives shown below whilst you listen to the tape. You may wish to make the objectives clearer to yourself by making a note or two on the page as you listen.

OBJECTIVES

When you have worked through this unit you will be BETTER ABLE to:

* **describe what a budget is**
* **provide the information required to prepare budgets**
* **understand how budgets are used**
* **use budgetary control techniques**

PART A WHAT IS A BUDGET?

1 Introduction

Each year the Chancellor of the Exchequer presents his Budget, or plan, to Parliament.

Its aim is to achieve certain things which are part of the government's policy.

ACTIVITY 1
Time guide
3 mins

Write down two or three things which the Chancellor might have to try and achieve through his Budget.

Typical examples might be to reduce inflation, combat unemployment, help small businesses, put defence or social services policies into action, or to win the next election.

These, though, have somehow to be financed. At the end of the day the budget is all about getting hold of and using money.

So the Chancellor might take steps to

* make more money available to him to use
* cut or tighten control over major items and expenditure
* switch expenditure and resources from one item to another
* use a variety of financial incentives and penalties.

It requires a lot of analysis, planning, negotiations and juggling about with resources.

2 Budgets

Think about your own workplace for a moment. Your section may actually be earning income through the sales it achieves or services it supplies.

Or it might be contributing in one of two other ways:

* directly by purchasing, manufacturing or processing materials to produce what is sold;

* indirectly by such things as designing, controlling, maintaining equipment, providing specialist services.

Whatever it does, your section is certain to be incurring expenditure, (meeting costs in other words), trying to get the best results from its resources and keeping control of costs. To do all these things it needs a budget.

ACTIVITY 2
Time guide
5 mins

Jot down what you think a budget is.

That's quite a hard one.

Perhaps you mentioned things like 'a certain sum of money' or 'a plan'. Both of these are important elements.

REFERENCE 1
page 89

B K R Watts in Elements of Finance for Managers describes a budget as

> 'any quantitative plan of action prepared in advance of the defined period of time'.

That definition contains all the important features of a budget. Let's examine them in turn.

* A budget is quantitative - that means it must be stated in figures - in sums of money. A general statement of what you intend to do may be useful but it's not a budget.

* A budget is prepared in advance - a budget must be drawn up before the period to which it refers. Figures produced during or after the period may be useful but they themselves are not the budget.

* A budget relates to a particular period - budgets are drawn up for a certain specific period (often, though not always, one year). An open-ended financial plan for the future isn't a budget.

* A budget is a plan - perhaps the most important point of all. It can't be a definite statement of fact because it relates to something which hasn't happened yet.

  Conditions may change during the budget period which mean the original budget isn't as reasonable as it originally seemed but it does at least offer guidelines and a clear idea of the plan of action required.

ACTIVITY 3
Time guide
3 mins

Jot down what you think is the very first thing you need to have clear before you can make any kind of plan.

I hope we can agree that, before you can make any kind of plan, you must know what you are trying to achieve. Everything else depends on that.

'Knowing what to achieve' are referred to in business as OBJECTIVES.

What the objectives are in your workplace will depend to some extent on what kind of organisation it is. Manufacturing industries, for example, have to make a profit. Local government services have to provide a certain level of service. Nationalised industries have to achieve a planned return on capital invested in their industry.

So, although I can't give you objectives which will be right for everybody, perhaps you can see that the following would be reasonable objectives for certain kinds of businesses.

* To make a profit of 30% on a certain product.

* To increase the share of the market by 5% for a certain product.

* To improve service to the public in certain areas.

* To survive commercially for a financial year. (This one is particularly relevant to new, small businesses.)

To achieve any of these, I hope you'll agree, needs planning and will probably involve the production of budgets.

ACTIVITY 4
Time guide
3 mins

Jot down two different kinds of budget which you think would be used in your workplace to plan to meet certain objectives there.

There are all sorts you could have thought of but these are all common. Perhaps your suggestions are among them though you could well have thought of others too.

* Sales budget.

* Production budget.

* Research and development budget.

* Training budget.

* Departmental costs budgets.

* Cash budget.

3 The Beginning of a Budget

How a budget is actually produced and the role that you, as supervisor, have in producing it is something we'll explore in PART B but, for the moment, let's just think about the beginning of the budget process.

Put more simply, 'Where on earth do we start?'

Let's begin by thinking about answering this question in manufacturing industry - in a business which makes and sells something.

Should we begin by planning the level of sales or begin by calculating how much we can produce or should we begin with something else entirely?

We need to identify the critical factor which influences all the budgets in a certain workplace. Let me show you what I mean by the following activity.

ACTIVITY 5
Time guide
3 mins

In each of the following situations the key budget which would have to be produced first may be

CASH
SALES
PRODUCTION

Look at each situation and decide which is the key budget for each.

Firm A exists in a highly competitive market and currently sells 500 units per month. It plans to increase this to 600 units per month in the coming year and, in fact, has the capacity to procude 750 units per month.

Firm B is the sole supplier of a specialist component. It can sell all that it produces and more.

Firm C is a small business with a large overdraft. It is currently owed a great deal of money and its bank insists the overdraft has reached the limit.

Here is what I would say is the key budget, on which all other budgets would depend, for each of these firms.

Firm A Sales. The firm must sell more. Everything else, including production, will follow from that.

Firm B Production. The firm has to produce more. If it achieves this then extra sales will follow.

Firm C Cash. The most important thing is for the firm to earn cash at the moment. This might even mean that the firm would have to refuse a potentially profitable contract if it didn't bring in cash quickly enough.

The factor that influences all other budgets is called the

KEY or LIMITING BUDGET factor.

All other budgets are limited by this one factor.

In practice

the SALES BUDGET is the commonest limiting budget factor in established commercial businesses

the CASH BUDGET is the commonest limiting budget factor in newly established small businesses.

It is less common for the Production Budget to be the limiting budget factor.

4 The Advantages of a Budget

Many of us, from past experience, think of a budget as something which restricts what we want or indeed need to do at work or at home. This can be very frustrating when we feel that it's simply the restraints of a budget, drawn up by accountants who have nothing to do with the real action, which are preventing us doing something important.

Perhaps you'll sympathise with some of these situations.

* The Training budget of a hospital has been spent. A nursing sister is refused permission to go on a course to learn how to use a new piece of equipment for monitoring heart disease. Patient care must suffer.

* Entertainments budget of a growing electronics form is exhausted. The sales manager is unable to offer proper hospitality to a visiting trade delegation from Saudi Arabia. No orders are won.

* The Overtime budget of a shipbuilding company is already over spent. No new overtime is authorised and the ship ends up 3 months late to the customer. Massive penalties result.

* The Departmental budget in the chemistry department of a university is underspent with one month of the financial year to go. The professor authorises a spending spree to ensure his budget is not cut next year. Unneeded equipment which is never ever used again is purchased.

Having a plan, which is all a budget is, can only be a good thing so, in these examples, the budgets themselves were not to blame for the unfortunate results.

ACTIVITY 6
Time guide
2 mins

Jot down who or what you think was to blame in any of these situations.

You may have noted a number of possibilities but perhaps we can boil them down to these:

* an over-rigid view of how the budgets should be enforced has been taken. This seems likely to be the case in the first and second examples.

* the budgets have been badly-produced and managed, particularly in the third and fourth examples.

So, though the way they are produced or managed may be at fault, budgets themselves are a help.

In practice, it is usually possible for senior management to override the budget so that, for example, the company does not have to pay massive penalties because its overtime budget (possibly a smaller sum) was overspent.

ACTIVITY 7
Time guide
5 mins

Suppose a small but growing company is managed by a group of five people.

They have a system whereby each year, over a number of meetings, they produce budgets for the coming financial year.

Jot down what you think would be two benefits to the company of their budgeting system.

Perhaps you'll find that your suggestions fit under one or more of the following possible benefits.

* Co-ordination - having to work together.
* Communication - having to let each other know what's happening.
* Planning - having to think ahead.
* Control - having a standard to measure performance against.
* Motivation - enjoying being involved in something important.

Let's look briefly at each of these in turn.

Co-ordination - Budgeting means that managers and supervisors in different deparments have to meet, discuss and relate their targets to each other.

It would be pointless, for example, for the Sales Manager to plan a 10% increase if the Production Manager is aiming for a 5% cut-back.

Communication - In order to work to a budget, people have to know what is possible or impossible in their own workplace.

Budgeting should encourage management to tell supervisors about the company's policies and the targets they are aiming for.

Planning - As we've seen, planning is at the heart of a budgeting system and using a budgeting system means that we have to use formal procedures to think about the future instead of muddling along from one day to the next. It also means that thought is given to the level of performance expected in every part of the organisation.

Control - The whole point of a budget is to influence the direction the organisation is taking. For the budget to be of value, the actual outcome must be regularly compared with planned outcome. If the two don't match up then controls can be used to take appropriate action. Without such a plan you have no yardstick to measure what's happening and any controls, therefore, are fairly random. With a system of budgets too you have a clear picture of who is responsible for operating the budget in various areas. This way strengths and weaknesses of sections, departments and whole areas of the organisation can be identified and ways found to capitalise on the strengths and improve the weaknesses.

Motivation - The more you involve people at every level in setting up the budget and in the planning and control that goes with it, the more they will know and understand about what you're trying to achieve. The more they are involved and have had a hand in setting targets which they can actually achieve, the more they are likely to be interested and concerned about the job they're doing.

If we have to single out any of these advantages as most important it should be

PLANNING and CONTROL

They really sum up the two halves of any budgeting system. We draw up a plan and then set into action controls to make sure that plan actually works. Let's explore the idea of budgetary control a little further.

5 Using Budgetary Control

We've agreed, I hope, that you need budgets from the outset to decide whether something can be done and what is required to bring it about.

They also give managers and supervisors targets to aim for and cost limits to work within.

However, budgetary control is just a very useful management tool. It may enable a manager to do his job more effectively but doesn't take away the need for skilled, flexible and far-sighted managers.

But unless they are actively used within the period they refer to they are largely a waste of time. They need to be referred to regularly in order to help us answer some key questions.

ACTIVITY 8
Time guide
4 mins

Bearing in mind what we've just said about what information budgets provide, jot down two important questions to which budgets might provide the answer for any manager or supervisor during the period they relate to.

Here are the questions which probably every manager or supervisor needs to ask. Of course, it doesn't end here and you may well have thought of more.

* Are we achieving our targets and keeping our spending within its limits?

* If not, where are we falling down and for what reasons?

* What steps do we need to take to improve our performance?

* Have things happened which require the budget, itself, to be modified?

Some budgets, particularly for public bodies, are very difficult to change once set, but no budget is perfect and unforeseen circumstances do arise. Thus a competitor may suddenly bring out a new product, the bottom may drop out of a market or we may have a strike on our hands. But with a budget, at least we know where variations are occurring, and can therefore take steps to pin-point the reasons.

ACTIVITY 9
Time guide
5 mins

Write down

a) two reasons largely within a supervisor's control why a department might fall down on its budget.

b) two reasons largely outside a supervisor's control why a department might fall down on its budget.

For a) you might have put down reasons like faulty work, bad timekeeping, inefficient organisation of the department, new staff not inducted properly.

For b) you might have put down reasons like the hold-up of supplies, teething problems with new products or systems, shortages of staff.

In order to make use of budgets the organisation needs to get hold of reliable information about what it has achieved in practice, and what its costs actually are. This is often more difficult than it sounds.

In the remainder of this unit we'll be looking at how you can use budgets to help you do your own job successfully and the part you can play in providing all that important reliable information.

Before we move on, though, perhaps you'd like to try these self checks.

SELF CHECK 1
Time guide
3 mins

A properly drawn up budget has four key features. Jot down what you think they are.

* _____

* _____

* _____

* _____

The answers to this self check are here in the following words, so you'll need to check out your answers carefully. You may not necessarily have used the same words as me but I hope we can agree that the four key features are that it is a plan - not just a general statement of what you hope to do; it is expressed in figures; it is prepared in advance - financial statements of any kind produced during the period in question may be useful but they are not to be confused with budgets; finally, budgets relate to a defined period - they are not open-ended future plans.

SELF CHECK 2
Time guide
8 mins

a) Write down two initial uses for budgets at the time when they are drawn up.

_____

_____

Fill in the missing words in the following paragraphs.

b) Budgets are largely a waste of time unless they are actively _____ in order to see whether the organisation is _____ its targets and keeping within its _____ limits.

c) We use the term _____ _____ to cover the use of budgets to help an organisation control its progress towards what it has set out to achieve.

d) A budget will not be useful to an organisation if it is managed so _____ that it does not permit some degree of flexibility.

The answers to this self check are here in the following words, so you'll need to check out your answers carefully. a) Budgets are essential for deciding at the outset whether an objective can be achieved and what this requires. They also give managers and supervisors their targets and cost limits for the forthcoming period. b) Unless budgets are actively used in order to see whether an organisation is meeting its targets and keeping within its expenditure limits, they are largely a waste of time. c) The use of budgets to help control progress is called BUDGETARY CONTROL. d) I would use a word like 'rigidly' to complete this sentence. A budget is a plan but unforeseen changes in circumstances may crop up which make it more sensible to adapt the plan rather than sticking to it at all costs. Budgets are a management tool but not an excuse for not managing.

6 Summary

* A budget is a plan usually described in financial terms, to meet certain objectives in the workplace.

* The starting point in producing a budget is to determine the key element which influences all other budgets. This will often be sales.

* Control is central to the budgeting process.

* The system of using budgets to control progress towards objectives is BUDGETARY CONTROL.

* Budgeting should never be so inflexible as to prevent sensible decisions being taken.

* Budgets can also help to improve:

    Coordination
    Communication
    Motivation.

PART B PREPARATION OF BUDGETS

1 Introduction

In the first part of this unit we saw that the budget is a financial plan, crucial to the successful management of any organisation in a given period. Clearly, preparing the budget needs a great deal of carefully co-ordinated information from different people. Let's now examine exactly how that preparation takes place.

2 The Budget Committee

The actual preparation of the budget is the responsibility of a budget committee whose chairman is usually a senior manager. Sometimes the chairman may even be the top person in the organisation - the managing director or chief executive or whatever his particular title happens to be in the organisation in question.

All the main functions or areas of responsibility in the workplace are represented on the budget committee.

ACTIVITY 10
Time guide
5 mins

Think about your own workplace.

Jot down the job titles of three of the people whom you would expect to represent major areas of responsibility on your budget committee.

_____

_____

_____

Since we all work in different sorts of workplace, the answers to this activity are likely to vary widely. However, here is my list of some of the people I would expect to find on a budget committee in a manufacturing company:

* general manager (chairman)
* company secretary
* sales manager
* production manager
* administration manager
* purchasing manager
* personnel manager
* chief accountant.

Each member of the committee will have the task of producing forecasts for his own area of responsibility. So:

the sales manager - will forecast how much he expects to be able to sell and what the selling price will have to be

the production manager - will forecast what production levels are possible.

In a small company, the budget forecast may be made by only two or three managers or even, perhaps, one man burning the midnight oil on his own!

ACTIVITY 11
Time guide
5 mins

Look once more at the rest of my list of people on my budget committee. I think you'll find the same or similar jobs represented on your budget committees too.

Jot down briefly against each job title what you think each of them would have to forecast.

* administration manager _____

_____

* purchasing manager _____

_____

* personnel manager _____

_____

* chief accountant _____

_____

Here are my suggestions as to what these people have have to forecast for their areas of responsibility. It's quite possible that you've thought of other points as well.

* administration manager - will forecast the costs of administration and changes in the costs of things such as rent and rates.

* purchasing manager - will forecast the costs of materials in the coming period, both raw materials if the organisation manufactures something and all the equipment and supplies any business needs to function.

* personnel manager - will forecast the staffing needed to operate in the coming period and the costs of keeping, taking on or shedding staff. The cost of staff will be affected by current pay negotiations in the company's particular industry and in the country as a whole.

* chief accountant - will advise on the implications of whatever is planned on the company's cash position and provide other departments with information about past costs and levels of performance. The cost of borrowing widely varies sometimes from month to month and there are all sorts of other financial restraints or incentives such as government grants which may affect whether the company should invest or cut back and by how much.

The chief accountant will also have the job of producing the MASTER BUDGET which brings together all the other budgets and provides a forecast of the profit which the company can expect to make. (If the organisation is non-profit making like a hospital, then the master budget will show how the organisation plans to operate within the budget limits it has been given.)

Most large organisations produce a Budget Manual which tells everybody involved in the budget what is required and how to collect and present their information.

The budget committee start by forecasting the key elements of the budget - usually in quantities as far as they are able. These will include things like:

* levels of sales in units

* planned increase/decrease of stock in units

* levels of production in units needed to meet any changes planned in sales and stocks.

Try this example of the sort of forecasting which has to take place.

ACTIVITY 12
Time guide
3 mins

ABC Enterprises Ltd currently produce 10,000 of component X a year. At a meeting in December the budget committee agree that sales in the coming year should be 14,000 components and that stock levels should be reduced from 3,000 to 2,000 components.

Jot down what the planned production level for the coming year should be.

I hope we can agree that the planned production level would have to be 13,000 units. We reach this by taking into account:

Sales	= 14,000
Planned decrease in stock levels	= 1,000
Production level needed	= 13,000

This was a relatively simple calculation. In practice the various factors which have to be pulled together and the number and complexity of the calculations is much greater than this! However, the general idea is the same.

If you work in an organisation whose main purpose is to provide a service (a hospital or a library for instance) you may be thinking:

'But it's not like that where I work!'

I agree.

There's clearly a difference in the way budgets are prepared in organisations which make something which they have to sell and make a profit on and in those which don't. We'll look at them separately, starting with a profit-seeking, manufacturing organisation.

3 Profit seeking organisations

3.1 Preparation of Sales Estimates

SELF CHECK 3
Time guide
2 mins

Complete the following statements with a suitable word or words.

a) The budget which has to be worked out before any of the others can follow is called the _____ or _____ factor.

b) In most profit-seeking businesses this factor is _____.

The answers to this self check are here in the following words, so you'll need to check out your answers carefully. It's the key or limiting factor which has to be worked out first. This is the factor on which all other budgets depend. In profit-seeking businesses the limiting factor is usually sales. Thus the sales forecast has to be made before purchasing or production can make theirs. Having said that, though, we've seen that different functions of the company have to work closely to prepare budgets. It's no use Sales planning to sell far more than Production can produce or Production planning to make more than Sales can sell.

We can see from that self check that the sales manager (or whoever represents sales on the budget committee) has a special responsibility to determine the sales forecast for the coming year as accurately as possible. If the sales manager is wrong - everybody else's budget will be wrong too.

ACTIVITY 13
Time guide
3 mins

Suppose your company makes sweets and chocolates and that you are responsible for forecasting sales for the coming year.

Jot down two ways in which you think you could gather information to help you make your forecast accurately.

There are a number of things you might have thought of. Perhaps they are among the items on my list but that isn't necessarily complete and you may well have considered other possible lines of enquiry.

INTERNAL METHODS

* Reports from your own area sales managers and sales representatives.

* Statistical analysis of past sales records to identify trends which seem likely to continue.

EXTERNAL METHODS

* Market research information about customers' likes and dislikes and about what your competitors are doing.

* Information about the general economic climate which may tell you whether people are likely to be spending more or less money on sweets and chocolates.

You can imagine, looking at that list, that you could end up with an awful lot of information coming in. How to make some sense of it all?

ACTIVITY 14
Time guide
2 mins

You see that I've put the items on my list under two headings - INTERNAL METHODS and EXTERNAL METHODS.

Jot down briefly why you think that is.

With the INTERNAL METHOD all the information can be found within the company's own records. You may even be able to arrive at your forecast simply by summing up individual sales representatives' forecasts.

The EXTERNAL METHOD involves going outside the company and looking around at what is happening as far as your competitors are concerned and in the country as a whole. You may not use your own staff to provide this information but they will have to look outside the company for it.

Using the internal method means that many people within the company can be involved in the process of supplying information. The external method tends to be managed by experts in marketing.

ACTIVITY 15
Time guide
5 mins

Think about what we've said so far about the INTERNAL METHOD and the EXTERNAL METHOD. Jot down what seems to you to be <u>one</u> possible benefit of the internal method and <u>one</u> possible disadvantage.

Once again, there's not necessarily one right answer to this activity but this is what springs to my mind.

* One major benefit of the internal method is that it involves a lot of people at all levels in the budget process. Provided they understand what they're doing and why and realise how important it is, this can make people feel more interested in and committed to the company and the job.

* The major disadvantage of the internal method is that it <u>does</u> only reflect what is happening inside the company. It <u>doesn't</u> take into account possible changes in economic conditions or what the competition is doing. Estimates produced by internal methods only may tend to be over optimistic.

So a good sales forecast may be based on <u>internal</u> forecast which is adjusted at a very senior level to take account of available <u>external</u> data.

3.2 The Budget

Once the key estimates, particularly sales, have been made, things fall into place and the budget committee can go on to produce the budget, described in money terms.

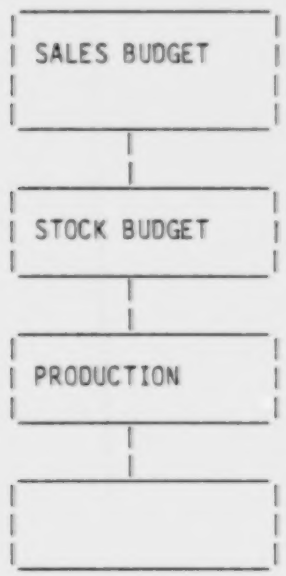
We've already worked out that, once the sales estimate is known and any increases or decreases in stock have been planned, it's possible to produce the production budget.

ACTIVITY 16
Time guide
3 mins

Here is a diagram of the budgets prepared so far and a list of some of the remaining budgets which still have to be prepared.

Fill in the budget you think should follow next in the sequence.

BUDGET PREPARATION SEQUENCE



BUDGETS STILL TO BE PREPARED

Departmental Expense Budget

Cash Budget

Budgeted Profit and Loss Account

Resources Budget

That activity may have taken quite a bit of thought. I hope you'll agree with me that, logically, once you've prepared the production budget and decided what production levels are being planned in the company year, you will have to plan the resources you need to meet these levels. Thus, the Resources Budget comes next in the sequence. In practice, this involves preparing three separate budgets for the following production costs:

* Machine use - the operating hours required on each machine or group of machines and the cost of those hours.

* Material usage - required quantities and costs of all materials needed to meet planned production levels.

* Wages - the number of man hours needed on production to meet production targets and the cost of those hours.

If you work in manufacturing industry you may realise at this stage that, even if you're not directly involved with the budget committee, when we start to talk about machine use, material usage and labour costs we are very much on your territory. As a supervisor you have a key role in this area of resource planning and control.

ACTIVITY 17
Time guide
4 mins

Jot down two consequences of poor supervision in each of the three main resource budget areas.

Machine use _____

_____

Material usage _____

_____

Labour _____

_____

_____

Between us we've probably thought of a wide number of consequences but I expect we can agree that

POOR SUPERVISION = OVERSPENDING ON THE BUDGET

Here are just some of the consequences you might have noted.

Poor supervision could lead to:

*	MACHINE USE	more breakdowns more idle time higher maintenance costs more scrap
*	MATERIAL USAGE	more scrap pilferage bottlenecks in production or idle time
*	LABOUR	low quality work or more scrap poor timekeeping increased overtime budget

Now let's see how preparing the resources budget leads on to the next budget in the sequence by working through an example.

ACTIVITY 18
Time guide
5 mins

Unique Windows Ltd manufacture double-glazed windows for which the basic materials are timber and glass.

Budget sales for the coming year are 8,000 units.

Stock at the beginning of the year is 1500 units but the production controller believes this level of stock is too high and plans to reduce stocks to 600 units by the end of the year.

Complete the calculation for the production needed in the coming year.

Budget Sales	_____
Less Stock Adjustment	_____
Required production	_____

Here's the completed calculation.

Budget Sales	8,000
Less Stock Adjustment	900 (1,500 - 600)
Required production	7,100

Now let's add to that information.

A standard window uses:

50 sq ft glass which costs £2 per sq ft

35 ft timber which costs £3 per ft

ACTIVITY 19
Time guide
4 mins

Work out what will be the total materials usage and the cost for timber and glass to meet the required production of 7,100 units.

Glass 7,100 x 50 = _____ x £2 = £_____.

Timber 7,100 x 35 = _____ x £3 = £_____.

In order to produce 7,100 units the materials usage would be:

Glass 7,100 x 50 = 355,000 x £2 = £710,000

Timber 7,100 x 35 = 248,500 x £3 = £745,500

Now we know how much material usage is planned we can decide how much will have to be bought in. So the next budget to be prepared is the

RAW MATERIAL STOCK BUDGET

which will plan for the actual materials to be purchased.

Suppose Unique Windows Ltd has these opening stock levels at the beginning of the year:

Glass - 6,000 sq ft
Timber - 2,800 ft

We already know they plan to reduce stock levels held. Let's suppose the planned closing stock levels are:

Glass - 5,000 sq ft
Timber - 3,500 ft

To calculate the quantity and cost of the glass we need to purchase we do the following:

Glass: Usage	-	355,000 sq ft
Add stock required at close	-	5,000 sq ft
Deduct stock at beginning	-	(6,000) sq ft
Budgeted purchase	-	354,000 x £2 = £708,000

You see that we've used the same principle as when we calculated the production level required by taking the sales figure and adjusting it by the difference between the opening and closing stock figure.

ACTIVITY 20
Time guide
4 mins

Now you work out in the same way the quantity and cost of the timber which will have to be purchased.

Timber: Usage	=	_____ sq ft
Add stock required at close	=	_____ sq ft
Deduct stock at beginning	=	_____ sq ft
Budgeted purchase	=	_____ x £ _____
	=	£_____

Here is the completed calculation to compare with yours.

Timber: Usage	=	248,500 ft
Add stock required at close	=	3,500 ft
Less stock at beginning	=	(2,800) ft
Budgeted purchase	=	249,200 ft x £3
	=	£747,600

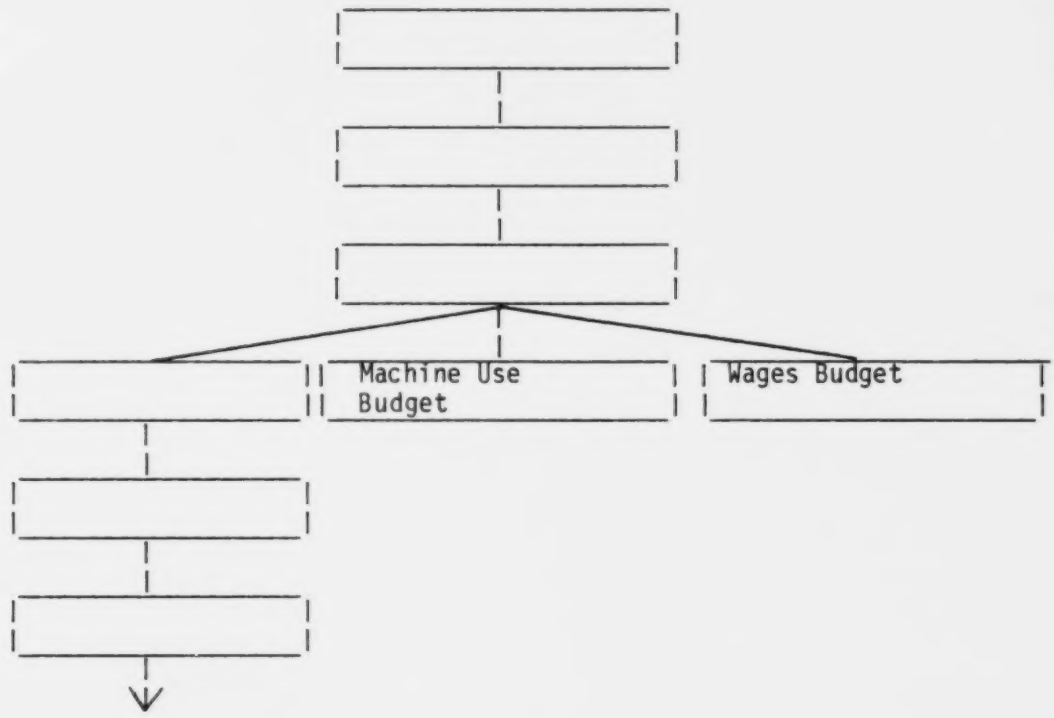
We've just followed through one part of the Resources Budget, materials usage, to the next two budgets in the sequence:

RAW MATERIAL STOCK BUDGET
MATERIALS PURCHASE BUDGET

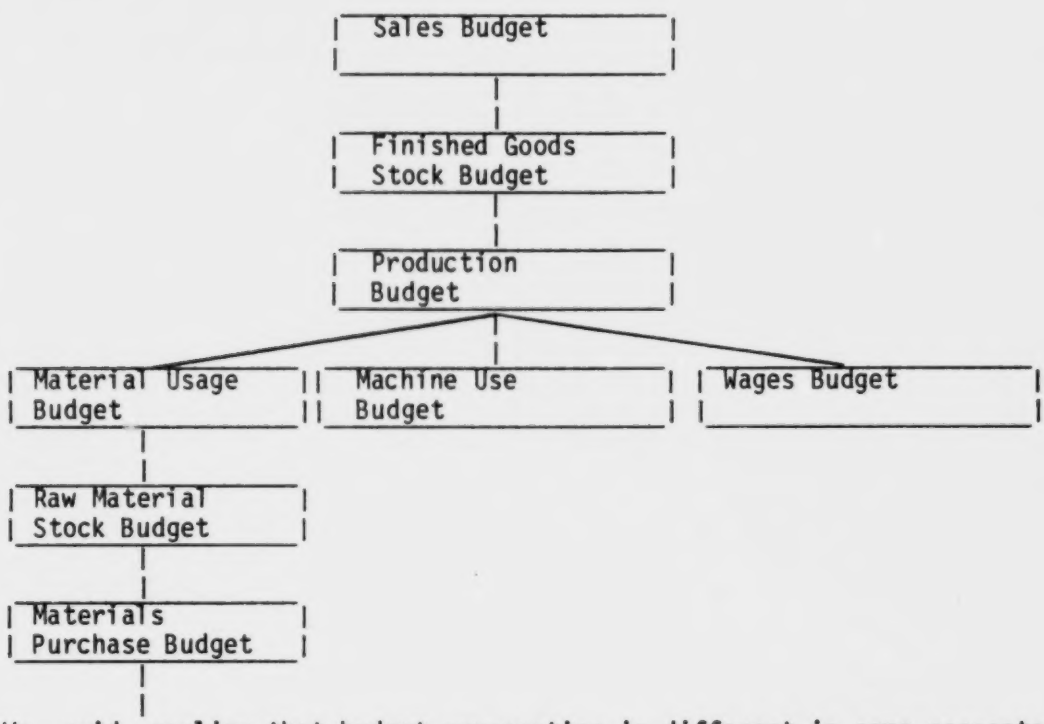
But you remember we said that the Resources Budget will also contain the plan for the use of machines and labour as well as the materials needed to meet planned production levels. Calculations like the one we have just been looking at will also have been carried out for machine use and labour as well and will, in turn, have led on to other related budgets.

SELF CHECK 4
Time guide
5 mins

To check your understanding of the sequence in which budgets are prepared so far, fill in the blanks in the following diagram with the name of a suitable budget.



I would complete that diagram like this. You may not have used exactly the same titles as me but I hope we can agree on the sequence of budget preparation.



We said earlier that budget preparation is different in some respects if you are not in the business of manufacturing something. So let's now have a look at the parallel stages of budget preparation in organisations which offer some kind of service.

4 Service Industries

If a business doesn't make something then it gives some kind of service. It may provide a transport service, for instance, or supply gas or electricity or offer medical services - or any one of several thousand services which we depend on.

Some service industries will have to make a profit in order to stay in business (a haulage contractor, for example, who transports goods manufactured by other businesses): some (NHS hospitals, for instance) do not expect to make a profit but have to plan to provide the best service they can within the money they are allocated.

Clearly, neither of these organisations need a finished stock budget or a production budget but the budgeting process is still equally important.

Let's look first at the budget development for a haulage contractor.

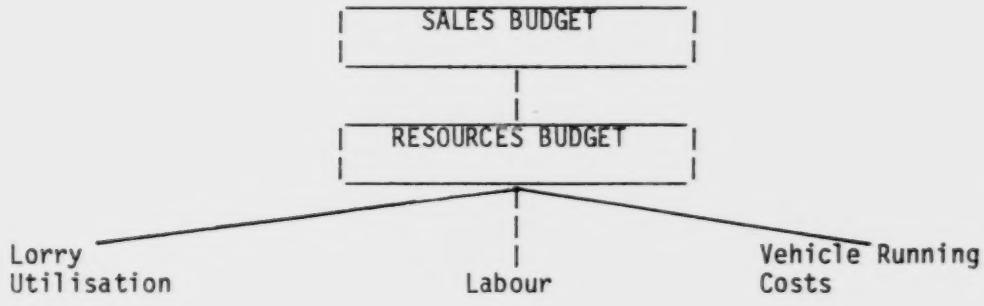
He would start at the same point as a manufacturer - estimating sales in the coming period - though in his case the sales will be the number of contracts to carry goods he can win.

ACTIVITY 21
Time guide
2 mins

Having determined the Sales Budget, what do you think will be the next stage in budget preparation for the haulage contractor?

I hope you decided that the next stage was to plan the resources required to meet planned sales - how many lorries, how many drivers etc.

So his budget sequence might look something like this.



ACTIVITY 22
Time guide
2 mins

What might the haulage contractor do if his present resources were insufficient to meet budgeted sales? Jot down two suggestions.

He could do a number of things including:

purchase more lorries

use his existing fleet of lorries and drivers more efficiently

refuse the contracts he couldn't meet with his present resources.

If he had more resources than he needed to meet budgeted sales, on the other hand, he might decide to:

lay off staff

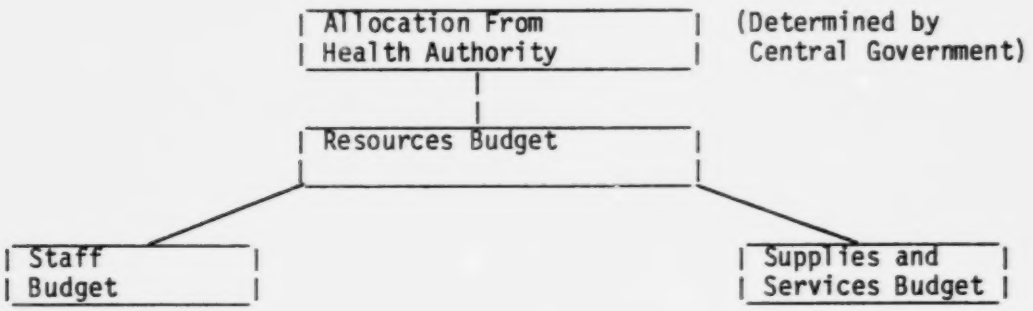
dispose of surplus lorries

reduce his prices to attract business

Any or all of these decisions would have to be tackled at his next stage of budget preparation.

Hospitals too are clearly concerned with making the best use of available resources but, in their case, the limiting factor is not 'sales' (the demand for beds from sick patients) but the allocation of resources they receive from central government.

So their budget sequence might look like this:



Hospitals rarely find they have too many resources available as the demand for health care appears to grow continually. Hospitals do make cuts in their budgets but this is usually due to a cut in their basic allocation of funds from central government rather than because demand is reduced.

5 Departmental Budgets

Having looked at what happens in manufacturing and service industries separately, we can now return to the 'mainstream'. Although there will be some variation in details, the principle is the same for the remainder of the budget preparation whatever the organisation.

At the same time as the other major budgets are being produced, managers and supervisors in every department are having to estimate how much it will cost them to function in the coming period.

Many of us provide a sort of back-up service to the main function of the business we're in. Thus, if your firm makes furniture then departments such as sales, finance, the office, the computer section, design, materials testing and many more provide the back-up to the actual manufacture. We can even say that the factory itself is backup since it is not directly part of the manufacturing process but without it, manufacturing can't take place.

All these back-up costs are known as OVERHEADS.

Sometimes what are overheads and what aren't can be quite a difficult distinction to make but it's very important for the survival of any business that it identifies them clearly and has them under control.

We won't say a lot about them in this unit but, if the subject of breaking down and identifying costs in a business interests you, then there are other units in this series which you might like to work through. They are listed in this extension.

EXTENSIONS 1 2 and 3 page 88

To give you an idea of what's involved in preparing the departmental budgets so a full picture of overheads can be built up, let's look at three separate examples.

ACTIVITY 23
Time guide 3 mins

In factory A, all lorries delivering materials or taking away finished goods have to get clearance from Security before coming up to the loading bay of the stores. Factory A runs a continuous process so routine maintenance and factory cleaning has to take place whilst production is running, causing as little disruption to the schedule as possible.

That description of activity in a factory contains some clues to some of the departmental budgets which will have to be prepared. Jot down three of them and who you think would be responsible for preparing them.

_____

_____

_____

If you work in a factory you may well have thought of several examples but, from the information I gave you, I hope you found it possible to pick up two of these budgets. The titles of the people responsible for preparing different budgets may vary and the overall responsibility would lie with the Factory Manager.

28

* Maintenance Budget - responsibility of the Maintenance Engineer

* Store Budget - responsibility of the Stores Controller

* Cleaning Budget - responsibility of the Domestic Services Manager

* Security Budget - responsibility of the Chief Security Officer.

I'm sure we can agree that work in these areas makes an important contribution to production even though it isn't directly part of production.

If you work in manufacturing industry you may be able to see that your own job relates to production in a similar way. You may be involved in producing information for these sorts of budget: you'll almost certainly be involved in making sure that they work!

We could do the same for other functions in any organisation. In Sales, for example, we could probably identify an advertising and sales promotion budget, a sales staff budget and a van fleet maintenance budget at the very least. The preparation of an Administration budget would need a budget first being prepared for the accounts section, the computer section, secretarial services and personnel services.

You can probably break down any major function in your own workplace in the same way and will be able to see that the preparation of a departmental budget needs an enormous amount of information and planning from a large number of people.

Although the most senior person in any one function will have overall responsibility for the departmental budget, you or your manager may well have a large degree of responsibility for the budget in your particular area.

Before we leave departmental budgets, let's just look in broad terms at what is involved in preparing the information needed by the budget committee.

ACTIVITY 24
Time guide
3 mins

Suppose you have to prepare information for the budget for your work area. Jot down what you think would be the first thing you would have to do.

You would probably hope somebody would give you some guidance on exactly what was required rather than just throwing you in at the deep end as that activity does!

I hope we can agree, though, that one of the first things you would have to do is

* identify all the expenses which your work area is likely to incur in the coming period.

Before you could plan for the coming period you would need to know, too, what level of performance was expected from your work area in the coming period so that you could review the resources you had available.

Once you started to examine costs in your work area you would find that, as in every other area in your work place, the nature of your costs varied.

ACTIVITY 25
Time guide
3 mins

Suppose you manage one of a chain of small shops.

Some of the costs you might identify would include

	Varies	Stays the same
* rent		
* rates		
* wages of sales staff		
* wages of part-time bookkeeper		
* commission on sales		
* packaging material		
* electricity for lighting and heating		
* insurance of the property and the stock		

Some of these costs would vary depending on the amount of business you did and some would stay the same regardless of how the business was doing.

Put a tick in the appropriate column beside each item on the list.

I would say that rent, rates, wages, electricity and insurance will stay the same, regardless of the amount of business you do. Commission on sales and packaging will vary depending on how much you sell.

Costs which remain the same whether the level of business activity rises or falls are called FIXED COSTS.

Costs which vary with changes in the amount of business being done are called VARIABLE COSTS.

EXTENSION 3 page 88

Distinguishing between fixed and variable costs can sometimes be quite a complex issue. We won't say a lot about it in this unit but, if you would like to know more about how costs are determined you might find it useful to read another unit in this series, Cost Centres.

You may have found even in that activity that you had to think twice about which costs were which - there is often a grey area in deciding whether a cost is fixed or variable.

However, making that distinction between fixed costs and variable costs is what is required.

The next stage is then to forecast what you think the variable costs will be given a certain level of business activity.

Here's an example of the sort of forecast a sales manager might produce.

SELF CHECK 5
Time guide
3 mins

Which of the overheads shown in this forecast are variable?

Anticipated Sales

	Pessimistic Forecast £3,000,000	Expected £4,000,000	Optimistic Foreca £5,000,000
Overheads	£	£	£
Commission (2%)	60,000	80,000	100,000
Distribution Costs (5%)	150,000	200,000	250,000
	210,000	280,000	350,000
Basic Salaries (salesmen)	90,000	90,000	90,000
Manager salary	20,000	20,000	20,000
Sales office costs	30,000	30,000	30,000
	140,000	140,000	140,000
Total Overhead	350,000	420,000	490,000
% of sales	11.67%	10.5%	9.8%

Variable costs rise or fall as sales rise. We can see from this forecast that all the distribution costs and all the commission rise as sales rise. These are variable costs: the other costs remain fixed.

ACTIVITY 26
Time guide
2 mins

Look at that Sales Manager's forecast again. Jot down what happens to overheads as a percentage of sales if the level of sales which the company expects to make rises.

Because some of the costs are fixed, the overheads as a percentage of sales decline as anticipated sales increase.

It's easy to regard fixed costs as something of a millstone round your neck but, as we see from this example, if business is booming, they decrease as a percentage of the total business activity and become less of a worry.

6 The Master Budget

Once all the departmental budgets are prepared, giving a picture of the overheads requirements for the coming period, they are passed to the Finance Department for two final, vital budgets.

The first of these is the CASH BUDGET.

This simply examines the cash implications of all the other budgets produced within the organisation. It says what cash will be coming in, what will be going out and what the cash balance or overdraft will be throughout the coming period. We'll look at cash budgets in more detail in Part C.

The other budget produced by the Finance Department is the MASTER BUDGET.

As its name suggests, this pulls together all the information produced in every department and becomes the master plan for the coming period against which other departmental budgets have to be adjusted.

The master budget is actually called the BUDGETED PROFIT AND LOSS ACCOUNT AND BALANCE SHEET.

EXTENSION 1
page 88

If you'd like to know more about how a balance sheet is laid out you'll find it in another unit in this series, Accounting for Money.

However, here's an example of the sort of information a budgeted profit and loss account might contain.

		BUDGET
SALES		3,000,000
Less Costs of Production		
Factory Labour		500,000
Factory Material		500,000
Factory Overheads		250,000
		1,250,000
Open stock		500,000
Closing stock		(250,000)
Cost of Goods Sold		1,500,000
Gross Profit		1,500,000
Less Non Production Expenses		
Selling and Distribution	350,000	
General Administration	400,000	750,000
Net Profit		750,000

You see that this example matches the amount of money which the company expects to gain, which will be taken from the Sales Budget, and matches this against the costs it expects to incur and shows a profit of £750,000.

SELF CHECK 6
Time guide
4 mins

From your understanding of the sequence of budgets which will have been prepared for the Master Budget, jot down four budgets from which the accountant will have obtained information for his analysis of costs.

All the budgets we have looked at in this part of the unit will have been used in the analysis of costs.

The costs of production would be obtained from the Production Budget which would comprise the Labour Budget, Materials Usage Budget and Machine Use Budget. The Stock Budget and Materials Purchase Budget would also be necessary to calculate the cost of goods sold. All sorts of Departmental Expenses Budgets would need to be included: in this example we've just shown overheads from Selling and Distribution and Administration. You would have been correct in mentioning any four of these.

When it is complete the Master Budget will be reported back to the Budget Committee.

If they are not satisfied?

You've probably guessed. The budget team will have to start again from the beginning.

7 Summary

* Preparing budgets requires coordination of senior management in a budget committee.

* Estimating sales based on salesmen's reports and/or external conditions will usually be the starting point of the budget process in organisations which sell goods or services.

* Knowing the allocation of funds is the starting point in non-profit seeking organisations.

* PRODUCTION LEVELS and COSTS can be determined once SALES are estimated.

* DEPARTMENTAL EXPENSES (OVERHEADS) will be estimated once SALES and PRODUCTION levels have been forecast. Some expenses will be FIXED and some VARIABLE.

* If the final profit estimate (Master Budget) is unsatisfactory, the process will be reviewed.

* Your main role as a supervisor in the budget process will probably be providing information for the budget forecast and controlling actual costs against budget.

PART C USING BUDGETS

1 Introduction

As we saw in Part B, producing a budget system takes a great deal of effort. And the time spent working on budgets is time not spent on your other duties. Producing budgets is expensive so, to feel that we are getting value for money from our budget system, it must be used.

2 Budgetary Control

SELF CHECK 7
Time guide
2 mins

Jot down the two main uses of the budget which we mentioned in Part A.

* _____

* _____

I hope we can agree that the two main uses of the budget are planning and control. We said quite a bit about planning in Part B since the actual preparation of the budget is in itself an exercise in planning. We'll say more later on in this part but first of all let's look in more detail at using budgets as a means of control.

All budgetary control systems follow basically the same steps:

* establish agreed budgets

* report actual results to departmental managers

* identify where actual performance differs from planned performance.

  These differences are called VARIANCES

* analyse which department or who is responsible for the variances

* analyse why the variances have happened.

ACTIVITY 27
Time guide
3 mins

Acme Machine Tools Ltd budgets for an income from sales (sales revenue) of £2,000,000 in the coming year. In the event, actual sales revenue turns out to be £1,750,000.

Jot down two reasons why you think the variance has arisen and who you think will be held responsible.

* _____

_____

* _____

_____

You may have thought of a number of possible reasons why the variance has arisen but I think we'll find that all our suggestions can be grouped into two main problem areas:

* sales price had to be lower than was forecast

* the amount of goods sold was less than forecast.

Of course, these problems would have to be investigated in more depth to find out what was causing them. It might be something like poor delivery dates, low quality or a competitor putting a better product on the market.

As to who would be held responsible - whoever was responsible for preparing the sales budget, whether that was the Sales Director, Sales Manager or whoever. He may not be directly to blame for the variance but he carries the responsibility for the problem.

In order to monitor what is happening, managers need budgetary control reports which are sent to them periodically, highlighting the variances for which they are responsible.

Here is an extract from a budgetary control report for a manufacturing company.

	BUDGET	ACTUAL	VARIANCE	
Sales	600,000	700,000	100,000	F
Less Costs				
Direct Materials	250,000	280,000	30,000	A
Direct Wages	100,000	120,000	20,000	A
Machine running cost	25,000	30,000	5,000	A
Depreciation	20,000	20,000	-	
Staff salaries	25,000	20,000	5,000	F
Rent and rates	30,000	30,000	-	
General Administration	20,000	15,000	5,000	F
Advertising	5,000	7,000	2,000	A
Others	10,000	13,000	3,000	A
	485,000	535,000	50,000	A
Operating Profit	115,000	165,000	50,000	F

You can see that:

where actual sales are greater than budgeted sales it is marked with F for FAVOURABLE VARIANCE

where actual costs are less than budgeted costs they are marked with F for FAVOURABLE VARIANCE

where actual costs are greater than budgeted costs they are marked with A for ADVERSE VARIANCE.

SELF CHECK 8
Time guide
1 min

Complete the following statement with suitable words.

Sales _____ Costs = _____ _____

I hope you answered Sales - Costs = Operating Profit, as shown on our extract from the budgetary control report.

As with the rest of the report, it shows the budgeted and actual operating profit and whether the variance, if any, is favourable or adverse.

We said just now that managers responsible for different budgets would periodically receive a budgetary control report and would then have to account for any adverse variances.

ACTIVITY 28
Time guide
3 mins

Here is our budgetary control report again.

Below is a list of the managers who receive a copy. Against each job title jot down the adverse variances which you think each of them would have to account for.

	BUDGET	ACTUAL	VARIANCE	
Sales	600,000	700,000	100,000	F
Less Costs				
Direct Materials	250,000	280,000	30,000	A
Direct Wages	100,000	120,000	20,000	A
Machine running cost	25,000	30,000	5,000	A
Depreciation	20,000	20,000	-	
Staff salaries	25,000	20,000	5,000	F
Rent and rates	30,000	30,000	-	
General Administration	20,000	15,000	5,000	F
Advertising	5,000	7,000	2,000	A
Others	10,000	13,000	3,000	A
	485,000	535,000	50,000	A
Operating Profit	115,000	165,000	50,000	F

Purchasing Manager (reports to Factory Manager) _____

_____

Factory Manager _____

Marketing Manager _____

_____

I hope we can agree that the managers would have to account on the adverse variances as follows:

Purchasing Manager - Direct Materials

Factory Manager - Direct Materials, Direct Wages, Machine Running Costs

Marketing Manager - Advertising

You may have felt that the variance of £3,000 under Others would have to be investigated too and, the more you thought about it, the more you probably felt that, as we saw in the Budget Preparation stage, problems are likely to be interrelated and what happens in one area may be the result of a decision made in another area.

ACTIVITY 29
Time guide
2 mins

Do you think a manager or supervisor should always be able to do something about adverse variances in his area of responsibility?

YES/NO

I hope we can agree that he may not.

* Some costs will be non-controllable.

* Some costs may arise in our budget centre but the responsibility may lie elsewhere. For example, idle time in one department may be caused by the failure of another department to supply information or materials.

2.1 Non-controllable Costs

Let's look a little more closely at what we mean by non-controllable costs. These are costs which are charged to a budget centre but which cannot be influenced by the actions of the people responsible for that budget centre.

ACTIVITY 30
Time guide
2 mins

Jot down one example of what you think is a non-controllable cost which might be charged to the budget of your work area.

* _____

_____

It's unlikely that we've all thought of the same thing but here are some examples which come readily to my mind. I hope you can see that they, and your example, are outside you or your manager's control.

* Rates charged to your budget for the premises you occupy

* Diesel fuel costs charged against the Transport Manager's budget where oil shortages cause prices to soar

* Heating costs in your work area where the heating system is controlled centrally.

Since these are outside your control it's important to identify them separately on any budget returns or other information you supply on how the budget is being controlled in your work area. Let me give you an example of why this is important.

ACTIVITY 31
Time guide
4 mins

Margaret Shaw is the supervisor of a school canteen with a monthly wages budget of £2,000. She receives a budget control report which tells here that the expenditure in her canteen for January, February and March has been £2,250 for each month.

Here are the reasons for the overspending:

January - extra staff employed to cover sickness

February - staff overtime to meet re-arranged schedules during school examinations

March - implementation of a nationally-agreed bonus scheme which was not built into the budget.

We usually regard wages as a controllable cost. But is that entirely true in this case?

Decide whether the adverse variance in each month has been caused by controllable or non-controllable wages costs and jot down briefly the reason for your decision.

January CONTROLLABLE/NON CONTROLLABLE

February CONTROLLABLE/NON CONTROLLABLE

March CONTROLLABLE/NON CONTROLLABLE

Here are my decisions to compare with your own.

January - I think this is non-controllable. A reasonable allowance for sickness should be built into the budget. Extra costs caused by excessive sickness could hardly be controlled by the supervisor.

February - This month's cost, however, is controllable. The supervisor should have anticipated this problem. Overtime costs would certainly be regarded as being within the supervisor's control.

March - These are clearly non-controllable. National agreements lie outside the supervisor's control and the budget will need to be adjusted to incorporate the extra payment.

We've said that it's important to discover WHO is responsible for any budget variance. This isn't a question of looking for someone to blame. The real issue is finding out WHY the variance has happened so that corrective action can be taken if necessary.

At the beginning of this part of the unit we looked for reasons why there might be a variance on sales and decided that the two likely causes are:

* the quantity sold is different from the quantity budgeted

* the selling price is different from the price budgeted.

So we can say that sales variance may be caused by:

Volume
Price

and it can be very important to planning what to do next that you know the precise cause of the variance. The following situation will show you what I mean.

ACTIVITY 32
Time guide
3 mins

Unique Double Glazing plan to sell 1000 window units at £200 each. Actual sales are 1100 but the price has to be reduced to £175 each.

Calculate the sales variance.

I've already entered some of the information you need to get you started.

Budgeted Sales Revenue - 1000 x £200 _____

Actual Sales Revenue - ____ x £175 _____

Sales variance (A/F) _____

I hope your calculations showed an adverse sales variance of £7,500. Here is how I arrived at that figure.

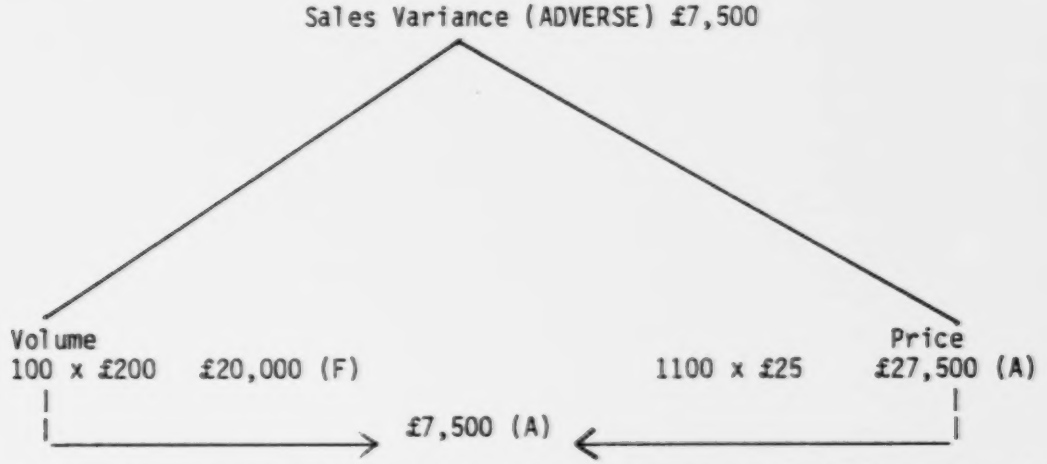
Budgeted Sales Revenue -	1000 x £200	£200,000
Actual Sales Revenue -	1100 x £175	£192,500
Sales Variance (A)		£7,500

In itself, that sales variance doesn't give us the whole picture.

We know that there is:

- a volume variance - 100 units more than planned were sold
- a price variance - units were sold at £25 less than the budgeted price.

So the variance is actually made up like this:



Having broken down the causes of the sales variance, the company would then need to discover the underlying reasons.

Perhaps, in this case, the unit price was reduced because of competition from another supplier or because extra discount was offered to special customers - there could be all sorts of reasons.

We've seen that it's important to analyse sales variance by

- volume
- price

We can analyse any variance on costs in a similar way.

ACTIVITY 33
Time guide
2 mins

Suppose Unique Double Glazing have an adverse variance on the cost of glass. Jot down the two headings under which you think those cost variances could be analysed.

You may not have used quite the same words as me but I hope we can agree that these are the appropriate headings. Words which you feel carry the same idea would be equally correct.

Volume - Did we need more glass than we budgeted to produce the window units?

Expenditure - Did we have to pay more for the glass than we budgeted?

All types of costs can be analysed in this way but we're just going to concentrate on two:

Labour
Materials.

ACTIVITY 34
Time guide
4 mins

A certain job is budgeted to take 50 hours and the price, the rate per hour, is £3.00.

The actual hours taken are 55 and the hourly rate paid is £3.10.

Calculate the labour cost variance.

Budgeted cost _____ _____ x ⟶ _____

Actual cost _____ _____ x ⟶ _____

Variance _____ (A/F)

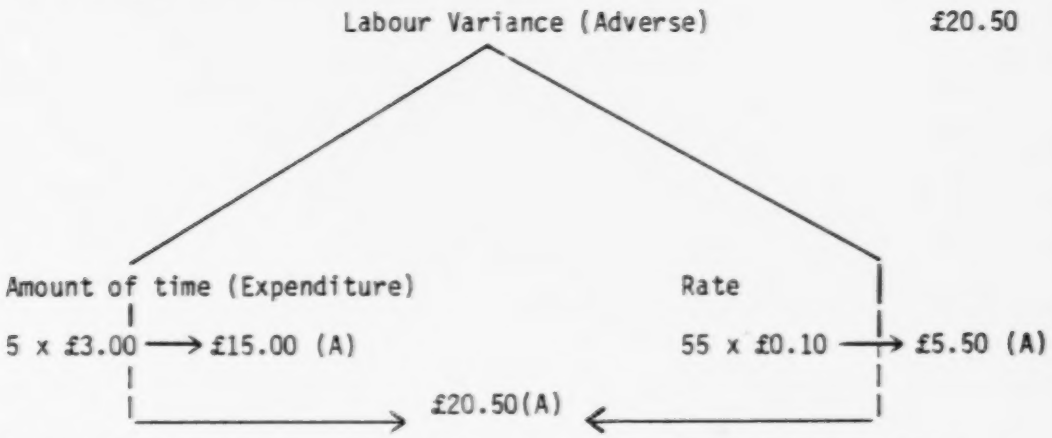
Here are my calculations to compare with yours.

Budgeted cost - 50 x £3.00 ⟶ £150

Actual cost - 55 x £3.10 ⟶ £170.50

Variance - £20.50 (A)

We can break that down like this:



Having done that we need to know what were the underlying reasons.

ACTIVITY 35
Time guide
4 mins

From your experience, jot down two reasons which you think might have caused the variance in time taken and the rate.

* _____

_____

* _____

_____

There could be any number of reasons. Perhaps your suggestions are among the following.

(Expenditure) Hours variance might be caused by:

* slack work practices resulting from poor supervision
* machine breakdowns
* technical problems
* bottlenecks leading to material shortages.

Rate variance might be caused by:

* overtime or bonus payments
* national pay award.

Now let's look at a materials variance.

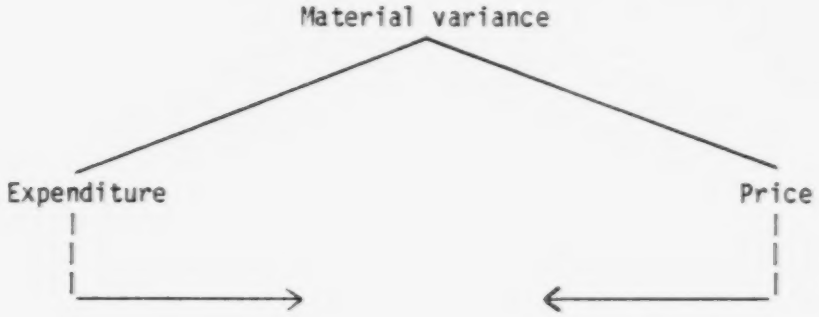
SELF CHECK 9
Time guide
5 mins

A particular job is budgeted to use 1000 kilos of material 'x' at £3.00 per kilo.

The actual usage is 1200 kilos but the price is £2.50 per kilo.

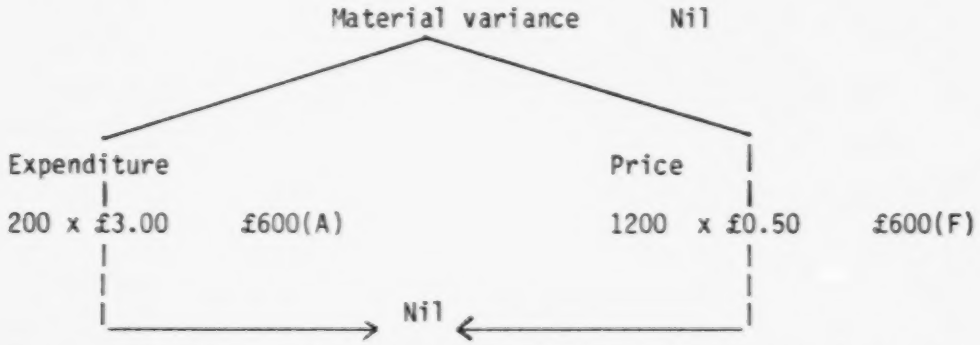
Calculate the material cost variance and analyse that into the price and expenditure variances.

Budgeted material cost
Actual material cost
Variance



Here are my calculations to compare with yours.

Budgeted Material Cost	1000 kilos x £3.00	£3000
Actual Material Cost	1200 kilos x £2.50	£3000
Variance		Nil



In this case the lower price exactly counters the extra cost from using 200 kilos more than were budgeted for.

We will look at variances in more detail in Part D on standard costing.

3 Flexible Budgets and Budgetary Control

In what we have said about budgetary control in this part of the unit so far, we have assumed that we were using FIXED BUDGETS.

That means that, before the beginning of the period to which the budget relates, costs are budgeted for and the budgeted costs remain the standard against which actual costs are compared, regardless of what happens during the budget period.

If we use a FLEXIBLE BUDGET, on the other hand, we can make adjustments to costs if production and sales vary from the original budget.

ACTIVITY 36
Time guide
2 mins

Jot down what you might see as one disadvantage of flexible budgets if you were a supervisor or manager involved in the budgeting process.

I think the main disadvantage is that it can involve a lot of extra work. (Some people are opposed to flexible budgets on principle too - they feel that it is like changing the rules of a game half way through.)

Despite the extra effort required, though, flexible budgets can be very worthwhile.

The first thing we have to do is to analyse costs into:

* fixed costs - costs which do not vary with production and sales
* variable costs - costs which do vary with production and sales.

Let's look at the difference this makes in practice. First of all do this quick self check.

And, in practice, computers make flexible budgeting far easier than it once was because they can automatically adjust different budgets in relation to each other. So, for instance, if costs of materials go up, a computer can be used rapidly to work out the implications of this on all the other budgets.

SELF CHECK 10
Time guide
2 mins

A firm budgets to produce and sell 2,000 units at a total cost of £10,000. It actually produces and sells 3,000 units at a total cost of £14,000.

What would the cost variance be if you were using a fixed budget?

I hope we can agree that, if we're using a fixed budget, we will show an adverse cost variance of £4,000.

But now supposing we assume that all costs are variable, that is that they vary with sales and production. If production goes up by 50% (from 2,000 to 3,000 units) then we 'flex' costs upward by the same amount.

Our budgetary control statement would then look like this:

All costs variable:

	Budget	Flexible Budget	Actual	Variance
Production/Sales	2,000	3,000	3,000	
Costs	10,000	15,000	14,000	1000(F)

ACTIVITY 37
Time guide
4 mins

Now let's assume that we regard 50% of our costs as fixed and 50% as variable.

Complete the budgetary control statement in this instance.

50% costs fixed:

	Budget	Flexible Budget	Actual	Variance
Production/Sales	2,000	3,000	3,000	
Costs	10,000		14,000	

We said that half the costs, i.e. £5,000, were fixed so they remain the same. If we flex the remaining half of costs which are variable (another £5,000) by 50% in line with the increase in production and sales, we adjust that figure to £7,500.

Using a flexible budget, then our costs are £5,000 fixed costs + £7,500 variable costs = £12,500.

This gives an adverse variance of £1,500 (£14,000 - £12,500).

Flexible budgeting is used in very many different organisations and provides a useful management tool because it enables you to take account of changed circumstances.

The example we've looked at shows how you would flex costs in a manufacturing organisation. Here are some ways in which flexible budgets might be used in organisations which provide a service rather than making something.

* Hospital - costs can be flexed in a ward to take account of greater or lower patient occupation than budgeted for

* Bus company - if passenger miles carried differ from the budget, the budgeted costs can be flexed

* Hotel - if room occupancy differs from the budget, budgeted costs can be flexed.

If you work in a service industry yourself you can probably think of other ways in which your budget can be flexed.

ACTIVITY 38
Time guide
3 mins

Flexible budgets allow you to see what will happen in differing circumstances and to make adjustments if circumstances change during the budget period.

Jot down two stages in the budget cycle at which flexible budgeting would be particularly useful.

* _____

* _____

I hope we can agree that flexible budgets are particularly useful at

* the planning stage

* the end of the budget period.

Let's look at each of those in turn.

Using flexible budgets at the planning stage lets you consider the consequences of output being greater or less than forecast.

So if your planned output and sales are 10,000 units, flexible budgeting will allow you to consider in advance what will be the implications of only achieving 8,000 or what will be the opportunities of achieving 12,000 units.

This applies just as much to non-manufacturing organisations.

ACTIVITY 39
Time guide
5 mins

The outpatients department of a busy district hospital plans for 25,000 outpatient visits a year. Resources - doctors, nurses, secretarial back-up, waiting rooms etc - are geared to cope with 25,000 visits. Management would consider in advance the problems associated with there being 20,000 or 30,000 visits.

Jot down three problems which might be anticipated if there are as many as 30,000 visits.

* _____

* _____

* _____

The problems are probably endless. These are just some of the things you would need to know.

* Can additional doctors and nurses be drafted in from other departments?

* Can secretarial services cope with the extra admissions?

* Is there enough space?

* What are the financial implications?

A flexible budget will show what the cost implications are across the board resulting from a change so that managers can

THINK AHEAD
ANTICIPATE PROBLEMS
ARRIVE AT POSSIBLE SOLUTIONS

At the end of a budget period we can use flexible budgets to re-jig figures to meet with reality. This is really what we were doing earlier on in this part of the unit.

It allows us to compare actual results at actual levels of activity against what would be expected at that level (the flexed budget).

SELF CHECK 11
Time guide
3 mins

Complete the following statements with a suitable word or words.

a) The main uses of a budgeting system are _____ and _____.

b) Control is achieved by comparing _____ performance against _____ performance.

c) Differences between planned activity and actual are called _____.

d) If any differences are identified it is important to find out _____ is responsible and the _____ for variances.

e) _____ budgets allow adjustments to be made if the circumstances differ from those expected.

The answers to this self check are here in the following words so you will have to check your answer carefully. a) The main uses of a budgeting system are planning and control. b) Control is achieved by comparing actual performance against planned or budgeted performance. c) Differences between planned and actual activity are called variances. d) When variances are identified it's important to find out who is responsible and the causes or reasons for the variances. e) Flexible budgets allow for adjustments.

4 Other Uses of Budgeting

Now let's look at how budgeting can be used in the profit planning process.

A simple technique called

BREAK-EVEN ANALYSIS

is widely used by all kinds of organisations.

This determines the level of production and sales a business needs to break even - that is to make no profit but no loss.

* Every unit produced and sold above break-even results in profit.

* Every unit below break-even results in loss.

To use break-even analysis to plan profits we first have to break costs down, as we have already done, into

Fixed Costs
Variable Costs.

Let's see how it would work.

Unique Double Glazing budget to sell 1000 window units at £200 each.

Budgeted fixed costs (rates, management salaries, machine maintenance etc) are £50,000.

Variable costs (materials, direct wages etc) per window are £100 per unit.

We can forecast the following:

* Each window unit sold adds £200 to income but £100 to costs. (The £50,000 fixed costs will exist no matter what the level of sales.) The £100 surplus on each window unit sold is called CONTRIBUTION.

* When the surplus from each window unit sold matches the fixed cost, break-even point has been reached.

In our example, we have the following:

Fixed Costs	£50,000
Surplus (Contribution) per unit	£100
Break-even point	£50,000 / £100
	500 units

If the company sells 500 units, which is 50% of its target, it has broken even. If it sells more, it makes a profit: if it sells fewer, it makes a loss.

Remember the company budgets to sell 1,000 units and profit is sales minus fixed and variable costs.

ACTIVITY 40
Time guide
5 mins

Calculate the business target profit if budgeted sales are achieved.

I hope your calculations worked out something like this.

Sales	- 1000 x £200	£200,000	
Less variable costs	1000 x £100	£100,000	
Fixed costs		£ 50,000	
			£150,000
Profit			£ 50,000

We can also express this as:

500 units above break-even x £100 (surplus) £50,000

SELF CHECK 12
Time guide
5 mins

What will the profit be if the company sells

600 units

400 units

If the company sells 600 units, that is 100 more than break-even, then the profit will be 100 x £100 = £10,000. If sales only reach 400 units, that is 100 below break-even, then the company will make a loss of 100 x £100 = £10,000.

This technique is useful in helping to make:

* Comparisons of production methods
* Pricing decisions
* Make or buy decisions (whether to make something yourself or to buy it in)
* Close down decisions.

Let's look at the first of those in more detail for a moment.

4.1 Comparison of Production Methods

Suppose a company sells a product for £40.00 and expects to sell 15,000 units.

There are two ways of making the product:-

Method A - Labour intensive (ie more staff, fewer machines)

Variable costs	£28 per unit
Fixed costs	£100,000

Method B - Labour saving (fewer staff, more machines)

Variable costs	£16 per unit
Fixed costs	£250,000

We want to determine which method is

more profitable
breaks-even at the lower level of sales

Profitability

	Labour intensive		Labour saving	
Sales 15,000 x £40.00	600,000		600,000	
Less variable costs	420,000	(15,000 x 28.00)	240,000	(15,000 x 16.00)
Surplus (contribution)	180,000		360,000	
Less fixed costs	100,000		250,000	
Profit	80,000		110,000	

Break-even

Selling price	40.00	40.00
Variable costs	28.00	16.00
Surplus (contribution) per unit sold	12.00	24.00
Fixed costs	£100,000	£250,000
Break-even	100,000 / 12.00	250,000 / 24.00
	8,333 units	10,417

ACTIVITY 41
Time guide
3 mins

Suppose the company are not confident that they can sell as many as 15,000 units. Would you recommend production Method A or Method B? Jot down your answer and a brief reason for your choice?.

I hope we can agree that, if they are uncertain that they can reach target sales, they would be better off using the labour intensive Method A which breaks even at a lower figure than Method B.

If, on the other hand, they had been confident about reaching the target sales, they could well have gone for Method B which offered a bigger profit.

Whatever happens, at least with this technique management can make an informed decision about the best production method.

Now try putting this technique into action yourself.

ACTIVITY 42
Time guide
5 mins

The County Council School meals service has informed all school meals supervisors that their individual meals service must break-even or be closed down.

Isabel Smith, a primary school meals supervisor, can produce and sell a maximum of 1000 meals per week.

She is told that her weekly fixed overheads are £1,000. County policy is to charge £0.75 per meal and Isabel cannot alter this.

She calculates that the variable costs per meal, mainly raw materials, are £0.25.

Work out the break-even for Isabel's canteen.

(Fixed overheads) _____

_____ = _____ meals

(contribution) _____

We can see that Isabel's position is fairly desperate! Here are her break-even calculations.

$$\frac{£1000}{£0.50} = 2{,}000 \text{ meals}$$

She cannot produce 2,000 meals because her limit is 1,000. Unless she is allowed drastically to increase prices, close down seems inevitable. If she could raise her prices to £1.25, her surplus would be £1.00 and if she could sell her maximum number of meals (1,000) she would just break even.

4.2 Non-financial budgets

Let's look briefly at non-financial budgets. All the budgets we've looked at so far have been concerned with money but we can use the same technique to help us plan for other key factors.

Here, for example, is how they can be used to provide information for management decisions on the allocation of resources.

Bed occupancy and availability (North of England Health Authority)

Medical Specialism	Beds Available		% Occupancy	
	1984/85	1983/84	1984/85	1983/84
Surgery	90	90	77	83
Medical	102	103	91	89
Orthopaedics	60	60	77	85
Psychiatry	106	132	62	50
Geriatric	180	180	95	95
Maternity	46	46	64	62
Gynaecology	30	30	65	73

Source Darlington Health Authority Financial Report 1984/85

Now this may not appear like a budget but the hospital managers are

* Planning for bed usage
* Recording their resources (beds)
* Recording the actual outcome (% occupancy)
* Presumably using the information for future plans

ACTIVITY 43
Time guide
2 mins

Which service received a major cut in bed allocation?

* _____

Which service appears to need a boost in bed allocation?

* _____

Psychiatry has had its bed allocation cut from 132 to 106 probably in response to the low occupancy rate of 50% in 1983/84.

The geriatric service stands out as needing more beds as 95% occupancy means to all intents and purposes that every bed is occupied all the time.

Of course the beds available is just the tip of the planning iceberg. Allocating new beds implies more nursing staff, medical staff, back-up resources allocated to that specialist area.

So you see the budget process can help manage in a wide range of areas beyond simple control and it need not be restricted to financial statements.

5 Cash Budget

Finally, let's look briefly at one of the most important areas of budgeting for any organisation - CASH BUDGETS.

In a cash budget the accountant will forecast

* what cash will be received and paid out during the budget period
* the timing of receipts and payments
* the bank balance or overdraft for each month

The cash budget is especially important for small, newly established businesses.

ACTIVITY 44
Time guide
2 mins

Who do you think would expect to see the cash budget of a newly established business? Jot down one suggestion?

* _____

You may have thought of a number of possibilities. The one I had in mind was the bank manager. He will want to examine the cash forecasts of a new business and will almost certainly insist on a cash budget before authorising a loan for a new business.

I don't want to give the impression that it is only new, small businesses which find cash budgets important.

ACTIVITY 45
Time guide
2 mins

Given that a cash budget tells you when cash is coming in and going out and what your balance or overdrafts will be at any stage, jot down two other organisations which would find cash budgets useful.

* _____
* _____

You could have suggested virtually any organisations. Business organisations, large and small, use them and so do charities and clubs such as sports and social clubs.

6 Summary

* Budgets must be used to justify the time and effort involved in preparing them.
* Budgetary control allows for the identification and analysis of variances.
* Managers and supervisors are held responsible for cost variances if these costs are within their control.
* Budgetary control can be achieved through fixed or flexible budgets but flexible budgets are more useful.
* Break-even analysis is a useful addition to the budgeting process and is particularly valuable in profit planning.
* Non-financial budgets can still provide management with useful information.
* Cash budgets are vital to all organisations but especially to the newly estalished small businesses.

PART D STANDARD COSTING

1 Introduction

If we have to control something - the output from a machine or from the workteam, for instance - it helps if we have a standard against which to measure performance.

Standard costing is really a continuation of budgetary control. Let's see what it is and how it relates to budgetary control now.

2 Standard Costing and Budgetary Control

REFERENCE 2
Page 89

Here is how the Institute of Cost and Management Accountants defines standard cost:

'Standard cost is a predetermined calculation of how much costs should be under specified working conditions and standard costing is therefore a system which uses standards for costs (and revenue) to allow detailed control by the use of variances.'

ACTIVITY 46
Time guide
2 mins

Jot down four key words or groups of words from that definition.

_____

_____

_____

_____

Well, our thinking about the most important words in that definition may vary a bit. I hope we can agree though that 'predetermined calculation', 'specified working conditions', 'standards' and 'detailed control' are important.

Using standard costs enables us to work out what performance should be under certain conditions so that we can identify variances and so control actual performance.

Perhaps this sounds rather similar to what we have already said about budgeting.

ACTIVITY 47
Time guide
3 mins

Jot down two features which budgeting and standard costing seem to have in common.

I hope we can agree that standard costing and budgeting are:

* both concerned with setting performance standards for the future

* both are aids to control

They are not, however, the same thing.

The important difference is that:

* budgets are concerned with totals - such as the costs of an entire department

* standard costs are concerned with individual units - each item of production, for instance, will have a standard cost

ACTIVITY 48
Time guide
1 min

If standard costing is concerned with individual units, do you think that this involves more or fewer people in budgetary control?

MORE/FEWER

I hope we can agree that standard costing takes budgetary control 'further down the line' and involves more people in responsibility for meeting standards in their particular area.

ACTIVITY 49
Time guide
4 mins

Jot down two advantages of more people being involved in budgetary control.

* _____

_____

* _____

_____

You may have thought of a number of advantages. Those I would single out are:

* if unit costs are applied widely and a lot of people are monitoring them, it is possible to identify a much wider range of variances. This improves control.

* the setting of standards gives everybody a target to aim for and makes people cost conscious throughout the organisation.

Standard costing, widely controlled by people, means that a lot of information about performance comes in.

This in turn leads to two other advantages of standard costing.

* It's possible to achieve real economics through thinking in advance of the best materials to use, the best methods and so on.

* Attention can be concentrated on the variances which exceed predetermined limits, rather than looking at all variances, some of which may be quite minor.

Perhaps we can sum all that up by saying that you don't have to use standard costing to achieve budgetary control but budgetary control is more effective if you do.

SELF CHECK 13 Decide whether each of the following statements is TRUE or FALSE.

Time guide
3 mins

a) Standard costing and budgetary control are two different names for the same thing. TRUE/FALSE

b) Budgetary control cannot take place without standard costing. TRUE/FALSE

c) Budgetary control whih uses a standard costing system is more likely to affect supervisory staff than budgetary control without standard costing. TRUE/FALSE

The answers to this self check are here in the following words, so you'll need to check out your answers carefully. a) Budgetary control and standard costing are linked but they are not the same thing. b) Budgetary control can take place without standard costing but the control would be achieved by comparing totals rather than unit costs. c) If standards are set at all levels in the workplace then supervisors are more likely to be directly involved in budgetary control.

3 Setting Standards

SELF CHECK 14 Jot down two key features of a standard cost.

Time guide
2 mins

It's unlikely that we've all said the same thing but here are the features I would note to compare with what you've said.

A standard cost is a predetermined cost which is achieved by:

* SETTING STANDARDS RELATED TO PARTICULAR CIRCUMSTANCES OR CONDITIONS OF WORK (This is the performance standard)

Predetermined costs are then applied to these standards which gives us the cost standard.

A good standard cost tells you not just what a particular cost is expected to be but also what is ought to be under certain conditions.

You can apply standard costs to all the costs in the workplace. In a manufacturing company these will include:

direct labour
direct material
overheads (fixed and variable)

We'll just look at standard costs applied to direct material and direct labour to see how standard costing works.

3.1 Standard cost rates

Cost rates are estimated taking all sorts of considerations into account.

ACTIVITY 50
Time guide
3 mins

Suppose you have to estimate material costs for the coming year for something which is extensively used in your workplace.

Jot down two things which you would take into account in estimating the cost.

_____

_____

If you are involved in purchasing you could probably think of all sorts of considerations. I hope we can agree though that any of these would be among your considerations:

* the contract price which you had already agreed
* any expected price change (for instance, you might know that the price of oil was going to go up)
* any discount you could negotiate for buying in bulk

Now let's look at the considerations you would have to take into account in estimating labour costs.

ACTIVITY 51
Time guide
2 mins

Jot down two considerations you would have to take into account in estimating labour costs in the coming period.

I hope we can agree that, although these are by no means the only ones, these would be among your considerations:

* the current hourly rate/piece rate
* likely trade union agreements on pay rises
* other costs such as overtime premiums, bonuses, employer's national insurance contributions etc.

Now let's have a look at performance standards.

3.2 Standard performance rates.

To use a standard costing system somebody must decide:

* quantities, types and mix of materials to produce any given product
* amount and type of labour to produce any given product

These technical standards are usually set by specialists and involve skill such as method study and job evaluation. It's too big a subject to go into in this unit but if you would like to know more, you might find it useful to work through another unit in this series - Method Study.

EXTENSION 4
Page 88

Suffice it to say that three main types of standard can be identified.

IDEAL STANDARDS

EXPECTED STANDARDS

CURRENT STANDARDS

Ideal standards are based on perfect working conditions but, as we know, conditions are often not perfect, often for reasons outside our immediate control. Although ideal variances can highlight major variances, people tend to find them rather discouraging because the targets may be too high to reach.

Much better, usually, are expected standards. These could well be called realistic standards as they build in an allowance for an acceptable level of inefficiency.

If the workteam is well supervised and willing to cooperate, expected standards should be attainable.

ACTIVITY 52
Time guide
3 mins

Jot down three areas of 'slack' when, inevitably, your workteam's time is not being spent on the job itself.

The sort of 'slack' which could be built into standard work times would include time for tea breaks, toilet breaks, social contact (i.e. chatting). After all people aren't robots. We would probably also have to make some allowance for machine break-downs and material hold-ups.

Current standards are based on current working practices.

ACTIVITY 53
Time guide
2 mins

Jot down one reason why using current standards would not be a sound basis for a standard costing system.

The main reason is that current practices may not be particularly efficient and, if you use them as the basis for standard costing, you tend to continue inefficiencies which could be got rid of.

Try this self check to firm up what we've said so far.

SELF CHECK 15 Complete the following statements with a suitable word or words.
Time guide
5 mins

a) Standard costs are based on _____ rates and _____ standard.

b) Performance standards can be based on an _____ standard, and _____ standard or the _____ standard.

c) The _____ standard is generally regarded as the most useful.

The answers to this self check are here in the following words, so you'll need to check out your answers carefully. a) Standard costs are based on cost rates and performance standards which are also known as technical standards. b) These can be based on ideal, expected or current standards but c) the expected standard is generally regarded as the most useful.

4 Standard costing and non-manufacturing organisations

What we've said so far about standard costing assumes that goods are being manufactured. A full standard costing system is less common in organisations which provide a service rather than manufacturing something but many industries nevertheless find it useful to set performance standards in order to

* measure actual performance
* base costs.

For example, a building contractor might base costs on standard performances for:

* cubic yards of earth excavated per hour by mechanical digger
* lorry loads of earth shifted per day
* bricks laid per hour.

ACTIVITY 54
Time guide
3 mins

Think about an office for a moment. Clerks, data processing operators and typists are at work and the manager spends a lot of his time talking to clients in his office.

Jot down two possible performance standards which you could set in this situation.

You may have thought of several, particularly if you work in an office. Here are my suggestions. You could set performance standards for:

* characters per minute punched in by a data processing operator

* letters typed per hour by a typist

* clients seen by the manager per day.

5 Standard costing in practice

Now let's put standard costing into operation in the following activity.

ACTIVITY 55
Time guide
5 mins

Plas-mould plc provides a variety of plastic furniture. A standard costing system is in operation. The following information is available for one product - a plastic table.

The raw material (plastic) has been costed at £6.10 per metre. The standard usage of material is reckoned to be 5 metres per table.

Two types of labour are required in the production process -

1 Moulders

2 Cutters.

The standard rate for moulders will be £4.00 per hour.
The standard rate for cutters will be £5.00 per hour.

The expected standard for moulders is 1½ hours per table.
The expected standard for cutters is 2½ hours per table.

Complete the standard cost sheet below to show what the standard price cost will be for a table.

Standard Cost Sheet

				£
Direct Materials : 5 metres at £6.10				_____
Direct Wages:				
Moulder	_____	hours x £ _____	£6.00	
Cutter	_____	hours x £ _____	£_____	_____

Here are my completed calculations to compare with yours.

Standard Cost Sheet

Direct Materials : 5 metres at £6.10				30.50
Direct Wages:				
Moulder	1½	hours x £4.00	£6.00	
Cutter	2½	hours x £5.00	£12.50	18.50
				39.00

So the standard price cost of a table is £39.

ACTIVITY 56
Time guide
1 min

What other cost will we have to add to the standard price cost before we know the total cost?

I hope we can agree that we still need to add the cost of overheads.

Now let's see how differences in actual costs, that is, variances, can be analysed.

6 Variances from Standard

We've already agreed that the main use of standard costing is in highlighting variances.

* Differences between Actual and Standard.

* Differences between what costs (or revenue) actually are and what they should be (standard).

With a sound standard costing system these differences can be highlighted for

* every raw material used

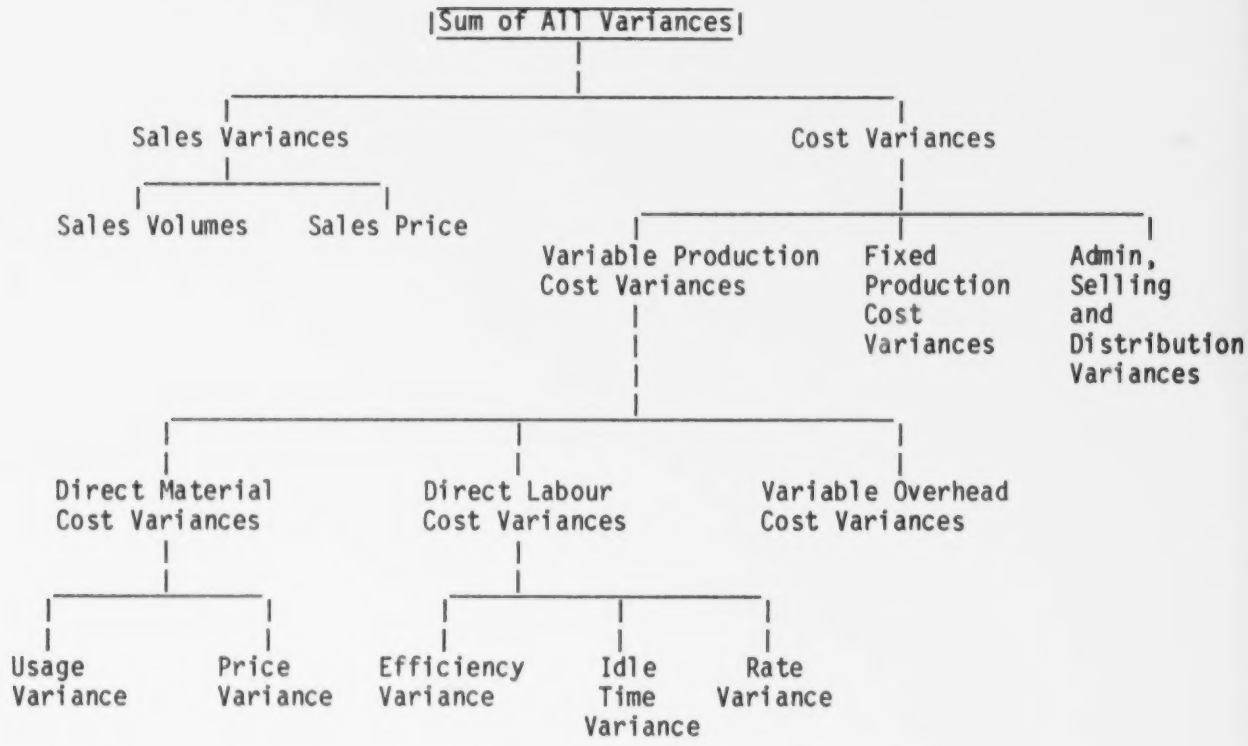
* every type of direct labour

* all overheads

which are contained in every product the company produces.

Clearly, this detailed information is very important to managers and supervisors.

This diagram shows how an analysis of variances breaks down.



We'll just follow through cost variances on direct labour and direct materials. If you'd like to refresh your memory about sales variances, you might like to look at Part C again and if you are interested in a more detailed breakdown of all the variances you might find it useful to take up this extension.

EXTENSION 5
page 88

Even if we just confine our analysis to materials and labour, standard costing can help pinpoint variances and so improve control and responsibility.

ACTIVITY 57
Time guide
1 min

From the diagram of the breakdown cost variances, jot down the two variances which could have resulted in a raw materials variance.

I expect you picked up the two variances:

usage variance
price variance.

A usage variance means that more material has been used than the standard indicated. This might have come about because inefficient methods meant more scrap than expected was produced.

ACTIVITY 58
Time guide
2 mins

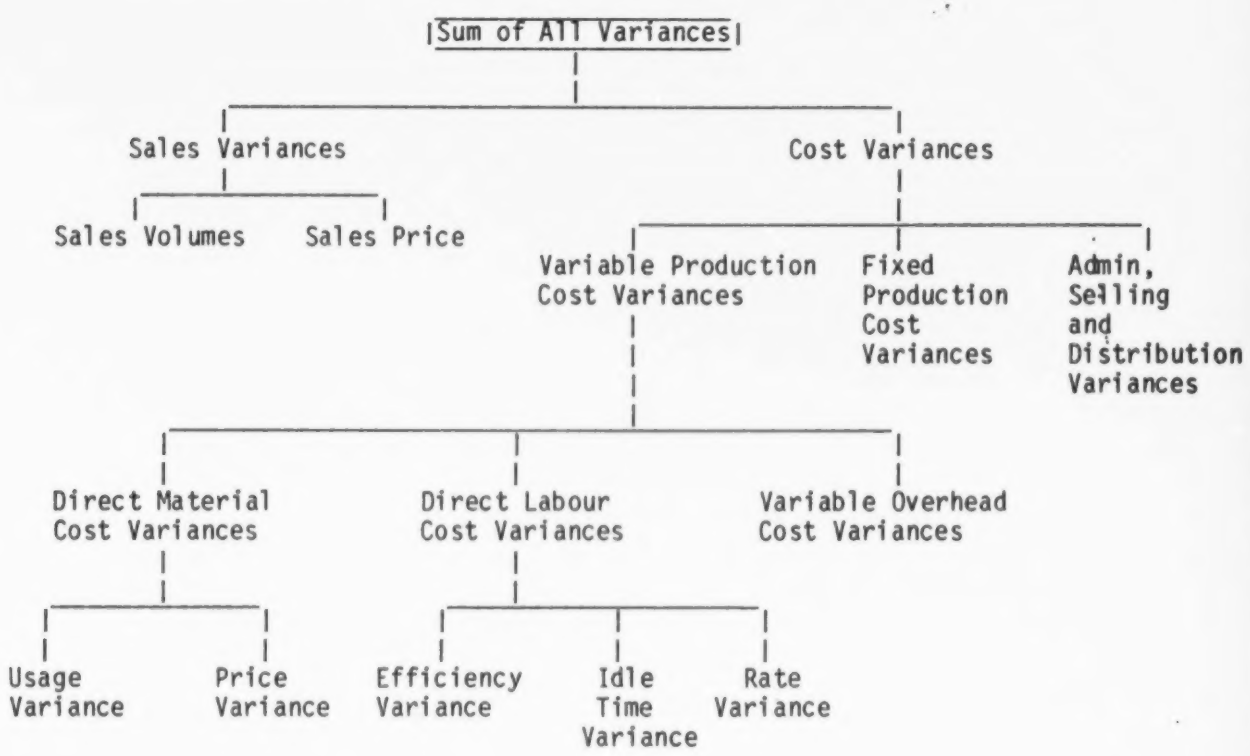
Who do you think is ultimately responsible for the variance?

Who do you think is directly responsible for excessive scrap being produced?

We may have used different names for the same job but I hope we can agree that ultimately, the production controller is responsible but the supervisor' is likely to have to account directly for scrap being higher than expected.

Now let's look at the direct labour cost variance.

Here is the diagram showing the breakdown of variances again.



ACTIVITY 59
Time guide
1 min

Jot down the variances which have contributed to the direct labour cost variance.

I don't suppose there's any doubt that an efficiency variance, idle time variance and rate variance could be the culprits here.

An adverse efficiency variance means that the workteam spent longer making the product than the standard indicated. Once again, we would need to know who was responsible and the reasons for the standard not being achieved.

An idle time variance is caused by the workteam, through no fault of their own, having no work to do.

This could be caused by, among other reasons:

machine break down
material hold-up
strike in another department.

ACTIVITY 60
Time guide
2 mins

Suggest who you think would be responsible for each of these possible causes.

* machine break down _____

* materials hold-up _____

* strike in another department _____

In practice, of course, things are often more complicated than they seem and there could be a number of contributory factors which different managers would have to account for. It's quite possible that, depending on how we interpret this situation, we have suggested different people who would be responsible.

I suggest:

Machine break down - Maintenance Engineer.

Material hold-up - Purchasing.

Strike in another department - Plant manager/personnel.

Whoever you have suggested, you can see that an analysis of variances from standard costs can lead to a very detailed and far-reaching investigation of the problem. Perhaps you've already been involved in some.

I don't want to paint a gloomy picture of a witchhunt looking for somebody to blame. It's important to identify who is responsible so that he or she can account for the variance so that better control can be established in future. And, of course, not all variances are adverse. It can be equally important to follow up a favourable variance to find out precisely why it happened so that you can make certain it happens again in future.

Finally, let's calculate some variances from standard costs so that you can use this technique if you want to in your own workplace.

ACTIVITY 61
Time guide
1 min

Let's suppose that product X has a direct material cost of 5 kilos of material at £2.00 per kilo.

What is the standard materials cost of the product?

The standard materials cost is 5 x £2 = £10.00.

ACTIVITY 62
Time guide
5 mins

Now let's suppose that during one month 100 units of product X are manufactured. 520 kilos of material are used at a cost of £1025.

What is the total materials cost variance?

I hope we can agree that the total materials cost variance is £25(Adverse).

Standard materials cost for 100 units	£1000
Actual materials cost for 100 units	£1025
Variance	£25(A)

ACTIVITY 63
Time guide
2 mins

Jot down two variances which may have made up that adverse materials variance. Clue - if you're stuck flick back to the diagram of the breakdown of variances on page .

I hope we can agree that two likely variances are

* price
* usage.

Let's investigate each of these a little further.

ACTIVITY 64
Time guide
3 mins

Given that you actually used 52 kilos but you expected to use 500 kilos at £2 calculate the price variance.

Here are my calculations of the price variance to compare with yours.

Cost of materials at standard £2	520 x £2	£1040
Actual cost of materials		£1025
	Price variance	15(F)

A favourable variance of £15 means that we obtained the materials for less than we expected. Clearly there must be an adverse variance on usage which, unless we investigated, would be partly disguised by the favourable variance on price.

ACTIVITY 65
Time guide
5 mins

Calculate the usage variance, given that you used 520 kilos instead of 500 at a standard of £5.00 per kilo.

Here are my calculations to compare with yours.

100 units at a standard 5 kilos per unit	500 kilos
Actual usage	520
Usage variance	20 (-) kilos

A variance of 20 kilos means in financial terms an adverse variance of £40.

Let's complete the unit by working through a last example - this time concerned with a labour variance.

ACTIVITY 66
Time guide
15 mins

The direct labour cost of a plastic chair is 3 hours of grade X labour at £2.50 per hour. One month, 300 chairs are produced and the labour cost is £2,200 for 910 hours. A machine break down accounts for 40 hours idle time.

Calculate the total labour variance
the rate variance
the idle time variance
the efficiency variance.

Total labour variance:

300 chairs at standard _____ hours x £ _____ £ _____

Actual cost 300 X _____ x _____ £ _____

Total variance £____(-)

Rate variance:

910 hours should cost 910 x £ _____ £ _____

Actual cost £ _____

Rate variance £ _____(-)

Idle time _____ hours x £ _____ £ _____(A)

Efficiency variance:

_____ chairs should take X 3 hours _____ hours

Actual time _____ hours

Efficiency variance _____ hours

Standard cost per hour £2.50

Efficiency variance £ _____( )

Here are the completed calculations.

Total labour variance:

300 chairs at standard 3 hours x £2.50	£ 2250
Actual cost 300 x 3 x £2.50	£ 2200
Total variance	£50 (F)

Rate variance:

910 hours should cost 910 x £2.50		£ 2275
Actual cost		£ 2200
	Rate variance	£ 75(F)

Idle time (always an adverse variance)

40 hours x £2.50	£100(A)

Efficiency variance:

300 chairs should take X 3 hours		900 hours
Actual time (less idle time)		870 hours
	Efficiency variance	30 hours
Standard cost per hour £2.50		
	Efficiency variance	£75(F)

We can see, then, that very efficient use seems to be being made of the workteam whilst they are actually working and also that, unless we dug deep, the real cost of that idle time might be disguised. Whether or not you use a budgeting system based on standard costing, you can see how variances fit together and how important it is that each of them is fully analysed.

7 Summary

Standard Costing is a further means of ensuring budgetary control.

Budgets deal with totals while standards are prepared for individual units.

A standard cost is a cost prepared in advance based on certain approved, specified work practices.

Standard costing allows management to pinpoint variances precisely.

Standard costs have two elements:

costs
performance level.

Standard performance levels should be based on expected standards and contain an allowable level of slack.

Standard Costing is more common in manufacturing industry.

PART E PERFORMANCE CHECKS

Time guide
60 mins

1 End Check

You may review your understanding of the unit as a whole by completing this group of questions. DON'T GUESS THE ANSWERS - if you're not sure flick back into the unit and check before responding.

If you are still unsure then put a question mark against your response before proceeding.

TRUE/FALSE

Respond to each statement by writing TRUE or FALSE in the space provided.

1 Every aspect of a business organisation features in the budget. _____

2 A successful budgeting system improves communucation and motivation. _____

3 The Raw Materials Purchase budget is the responsibility of the Sales Manager. _____

4 If a Company owned machinery and equipment which could produce 150 units per day, a workteam which could produce 160 units per day and orders for 155 units per day, then the Principal Budget Factor would be the number of orders. _____

5 Managers may not be responsible for all variances on their budgets. _____

6

Budgeted departmental cost	£10,000
Actual departmental costs	£11,000
Variance	£ 1,000 (F)

_____

7 The use of break-even analysis will prevent a business from making a loss. _____

8 Standard costing tends to mean that more people are involved in budgetary control. _____

COMPLETION

Respond by completing each sentence with a suitable word or words.

9 The two main functions of a budget are _____ and _____.

10 A budget is usually described in _____ terms and relates to a certain _____.

11 All the departmental budgets are drawn together in the _____ budget.

12 If you were starting up a small business, your bank manager would be particularly interested in your _____ budget.

13 Flexible budgeting allows you to _____ the budget if circumstances change.

14 When a variance occurs, it is important to establish _____ is responsible and the _____ of the variance.

15 If the actual performance is better than that indicated in a budget then this will cause an increase in profits and is called a _____ variance.

16 Budgets are concerned with _____ costs of a department but standard costs are concerned with _____ costs.

MULTIPLE CHOICE

Respond to each question by putting a mark against the ONE answer which is most correct.

17 The key budget factor is always:

(a) the number of products which a company can sell

(b) the amount of cash which a company has available

(c) any factor which restricts production

18 Which of the following will usually be a fixed cost?

(a) commission on sales

(b) wages of assembly line workers

(c) your salary as a supervisor

(d) packaging material

19 Variances are:

(a) an indication that performance is worse than expected

(b) differences between planned performance and actual performance

(c) costs over which you have some control

(d) a surplus

20 Break-even analysis enables you to:

(a) calculate how much your profits will be

(b) estimate how long you will need to pay off an overdraft

(c) compare two similar years' performance

(d) determine the point at which you will not make a loss nor a profit

21 If a company has fixed costs of £100,000 and a contribution per unit of £5, how many units does it need to make to produce break-even?

(a) 20,000

(b) 50,000

(c) 500,000

(d) 100,000

22 A budget describes:

(a) what happened in the previous year

(b) what is happening currently

(c) what is forecast to happen in the coming period

(d) how what is currently happening compares with performance in previous years

23 Standard costing is:

(a) another name for budgetary control

(b) essential to budgetary control

(c) one way of improving budgetary control

24 A standard cost measures:

(a) what a cost will be in the coming period

(b) the lowest possible cost in the coming period

(c) what a cost ought to be in the coming period

END CHECK - Checkout

Audio Tape Side 2 Time guide 35 mins

The answers and explanations for these End Checks are on Side 2 of our Audio Tape. Have your responses with you as you play this tape. As you listen you can check out how well you have done and make notes as you proceed.

2 Tutor Check

Time guide 60 mins

Dickens Ltd manufactures a single product, here is the budgeted performance for the month of March.

Production - Sales	20,000 units at £10.00
Direct materials	£60,000
Direct labour	£40,000
Maintenance	£10,000
Supervisory wages	£25,000
Rent and rates	£25,000
Other costs	£36,000

Actual results for the month were as follows:

Production - Sales	37,500 units at £8.00
Direct materials	£85,000
Direct labour	£45,000
Maintenance	£14,000
Supervisory wages	£27,000
Rent and rates	£26,000
Other costs	£50,000

1 Produce a budgetary control statement comparing

(a) budgeted to actual sales

(b) budgeted to actual costs

(c) budgeted to actual profit

(Remember that every variance should be followed by (F) Favourable or (A) Adverse).

You notice that we're dealing with budgets and not standards, so the variances are not broken down into the detail which you would find in a standard costing system.

2 Show how the sales revenue variance can be broken down into

(a) sales price

(b) sales volume

Suppose in the above budgeted information the following cost information were available

- direct materials, direct labour and maintenance costs are regarded as variable
- rent and rates and supervisory wages are regarded as fixed
- other costs consist of fixed costs of £16,000 and variable costs of £1.00 per unit produced and sold

3 Produce a budgetary control statement which takes into account this information about fixed and variable costs. This means that you will be using a flexible budget instead of the fixed budget from which we've obtained our information so far.

4 In a sentence or two say what you think the advantages of a flexible budget system would be in this case.

Send to tutor

Now get your answers to your study tutor either by post of handing it over personally. You will receive your tutor's assessment and comment back through the post as soon as can be managed.

3 Work-based Project

Time guide 60 mins

There will probably be some form of budgetary control in your workplace. The following questions ask you to find out something about it and your role in the budgetary control system. You need only write one or two sentences for each question.

a) Who has direct responsibility for the budget in your work area and to whom is that person directly responsible?

b) Which budget or budgets are you or your manager responsible for producing?

c) Describe how information about actual performance (e.g. actual costs) is fed back to you and your workteam.

d) Do you think the feedback of information to you could be improved so that you could be more involved in budgetary control? If so, briefly suggest how this could be done.

e) Describe what happens if actual performance does not correspond to budget. Are you or your manager held to be responsible in any way?

If there doesn't appear to be a clear budgetary control system in your workplace and you would find it difficult to answer the questions above, describe how you think a budgetary control system could be set up in your workplace.

Send to tutor

Now get your answers to your study tutor either by post of handing it over personally. You will receive your tutor's assessment and comment back through the post as soon as can be managed.

PART F UNIT REVIEW

1 Return to Objectives

Having completed your work on this unit, let's review how you feel about each of our four opening objectives. I will repeat them here and add comment.

You will be better able to

* **DESCRIBE WHAT A BUDGET IS**

We've seen that a budget is a financial plan prepared in advance of a certain period. Every department in a business organisation is involved in forecasting its budget depending on the level of business activity planned. This can involve a lot of people in a great deal of work but this can be a worthwhile investment if the budget is regarded, not as a financial straight-jacket, but as a valuable management tool for planning and controlling.

You will be better able to

* **PROVIDE THE INFORMATION REQUIRED TO PREPARE BUDGETS**

We've discovered that the preparation of the budget, the planning stage, is every bit as important as operating within the budget once it is set. At this stage, management are very dependent on the quality and accuracy of the information you give them. I hope you'll find that a better understanding of how costs are broken down and of how budgets actually operate will help you to povide and understand the budget information you are asked for.

You will be better able to

* **UNDERSTAND HOW BUDGETS ARE USED**

A budget is an expensive exercise unless it is constantly used during the period it relates to. We've seen that it can be used to compare actual performance with planned performance, flexed to take into account changes in circumstances or to forecast what will happen in certain circumstances and to make plans accordingly. It also helps management to determine the point at which they will begin to make a profit, by the use of break-even analysis, and thus to set targets which ensure the profitability of the organisation.

You will be better able to

* **USE BUDGETARY CONTROL TECHNIQUES**

Using fairly simple examples, we've used most of the many budgetary control techniques which would be used in your workplace. These include break-even analysis, flexible budgeting and standard costing. If you are involved in setting the budget in your work area or are on a budget committee you may already have to use these techniques. In that case I hope the work you have done in this unit will have increased the confidence with which you handle the techniques. If you feel that your role is just to supply information and to keep within the budget in your area, I hope the work you have done will show how important your contribution is and how and why it is used.

I hope that the work you have done was enjoyable and useful enough to encourage you to continue in your studies.

2 Extensions

I recommend that you take up as many of these extensions as you can. They will further increase your understanding and interest. You will also be able to check out a number of the ideas that I mention in the Unit. The extra time and effort will prove very worthwhile.

These three units are concerned with costs. Accounting for Money explains how costs are identified and accounted for and Cost Reduction and Cost Centres, as their titles suggest, take a more specialised look at these two areas.

EXTENSION 1

Book: Choice Series unit 70: Accounting for Money

Author: Dennis Bainbridge

Publisher: Northern Regional Management Centre

EXTENSION 2

Book: Choice Series unit 72: Cost Reduction

Author: Roger Holmes

Publisher: Northern Regional Management Centre

EXTENSION 3

Book: Choice Series unit 75: Cost Centres

Author: Alastair Clelland

Publisher: Northern Regional Management Centre

EXTENSION 4

Book: Choice Series unit 33: Method Study

Author: Robert Twitty

Publisher: Northern Regional Management Centre

EXTENSION 5

Chapters 5 and 6 of this book contain a more detailed breakdown of variances than we have given in this unit.

Book: Cost Control for the Manager

Author: H J Goater

Publisher: Bell's Supervisory and Management Handbooks

These extension opportunities can all be taken up via your Support Centre.

They will either have the materials or will arrange that you have access to the materials. However it may be more convenient to check out the materials with your Personnel or Training people at work - they may well give you access. There are other good reasons for approaching your own people, for example they will become aware of your interest and you can involve them in your development.

3 References

REFERENCE 1	Book:	Elements of Finance for Managers
	Author:	B K R Watts
	Publisher:	MacDonald and Evans
REFERENCE 2	Book:	ICMA Management Accounting Official Terminology
	Publisher:	Institute of Cost and Management Accountants

These references can all be taken up via your Support Centre. They will either have the materials or will arrange that you have access to the materials. However it may be more convenient to check out the materials with your Personnel or Training people at work - they may well give you access. There are other good reasons for approaching your own people, for example they will become more aware of your interest and you can involve them in your development.

If you do wish to make use of these references then don't think that you must read them right through. Just dip into them for a slightly wider treatment of the topic raised by the unit.

I should warn that the language and style of the writing is often difficult to cope with. So don't struggle with it too much. Do what I do when in difficulty, put the book back on the shelf and find a better one!

THE CHOICE SERIES

PRINCIPLES AND PRACTICE OF SUPERVISION

11 Needs and Rewards
12 Enriching Work
13 Workteams
14 Team Leading
15 Leading Change
16 Organisation Systems
17 Supervising in the System
18 Supervising with Authority
19 Workplace Control
20 Taking Decisions

TECHNICAL ASPECTS OF SUPERVISION

30 Looking at Figures
32 Using Graphs
33 Method Study
34 Easy Statistics
35 Quality Control
37 Controlling Output
38 Value Analysis
39 Quality Circles
40 Computers
41 Stores Control
42 Managing Time
43 Descriptive Statistics
45 Supervisors & Marketing

COMMUNICATION

60 Communicating
61 Speaking Skills
62 Writing Skills
63 Communication Systems
64 Orders and Instructions

ECONOMIC AND FINANCIAL ASPECTS

70 Accounting for Money
71 Control via Budgets
72 Cost Reduction
73 Wage Payment Systems
74 The National Economy

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80 Training Plans
81 Training Sessions
82 Discipline and the Law
84 Health and Safety
85 Industrial Relations in Action
86 Equality at Work
87 Hiring People
88 Supervising and the Law